The Northern Light;

Devoted to Free Discussion, and to the Diffusion of Useful Knowledge, Miscellaneous Literature and General Intelligence.

VOL. II. ALBANY, N. Y. AUGUST, 1842. No. 5.

THE NORTHERN LIGHT,

Published at No. 20 Market-Street, Albany, on the 15th of each month, is conducted by

JOHN A. DIX, T. ROMEYN BECK,
GIDEON HAWLEY, AMOS DEAN,
ALONZO POTTER,

and furnished to subscribers on the following terms, IN ADVANCE.

For a single copy for one year,..... $1 00
For six copies do..... 5 00
For one hundred copies do..... 75 00

TO THE PUBLIC.

THE NORTHERN LIGHT is devoted to the free discussion of such topics of public interest as are not partisan in their character: but all communications, excepting such as are merely literary or designed to convey general intelligence, must appear under the signatures of their authors. The conductors of the Northern Light are not responsible for the opinions expressed in these communications; nor are these opinions to be deemed, in the slightest degree, significant of their own. It was believed that the freedom of discussion, on which the publication is founded, would, by exhibiting a variety of opinion and argument on the same subject in the same paper, be likely to elicit truth; but in thus opening its columns to all, it is manifest that the responsibility of the conductors can extend only to the exclusion of matter which is either partisan or personal in its character, or which is repugnant to sound morals.

Political Science.

[For the Northern Light.]

A PROTECTIVE TARIFF—MORE FACTS FOR FARMERS.

BY W. H. JANSEN.

As some have taken exceptions to my views upon this subject, it is no more than right that I should reply. All I ask of those who differ with me, is to refute my arguments with arguments, and my facts with facts—not assertions. And if I do not reply to some attacks upon my articles, it will be on the supposition that it is unnecessary. It is a standing argument, that the compromise act has deranged our currency, and produced the embarrassment under which we now suffer. Has not the currency been as much deranged heretofore, and at a time too, when we had a high tariff? If any one will peruse the history of the currency from 1816 to 1823, they will find this to be a fact. But how could the compromise act have deranged the currency? There has come more specie into the country than has gone out, and in 1837, when the derangement took place, the excess of imports of specie was nearly $5,000,000, and in 1838 nearly $15,000,000. Now, I wish our protectionists to give us facts and arguments on this point, and not assertions. There has gone less specie out of the country for the last four years, than there did during the same period when we had a high tariff. See my table. I contend that the derangement is wholly owing to excessive issues of bank paper. The issues of the U. S. Bank were as follows from 1827 to 1834, according to the sworn statements of its officers:

1827,.....	$30,937,866
1828,.....	33,682,905
1829,.....	39,219,602
1830,.....	40,663,805
1831,.....	46,032,057
1832,.....	66,293,707
1833,.....	61,695,913
1834,.....	54,911,462

Thus, in the short space of five years, the issues of that bank doubled. The premium on its stock was from ten to twenty-five per cent., thus creating a desire in capitalists to invest in similar institutions. Accordingly, the state legislatures were besieged with applications for bank charters, and they were granted with the greatest readiness; and went into operation upon the expanded issues of the U. S. Bank. In this state alone, we find by looking at the session laws, that from 1828 to 1832, 27 new banks were chartered,—a greater number than had been chartered from 1776 to that date. And the public documents show that a much larger number were petitioned for, and which were subsequently chartered. Other states followed the example. Most of this money not being wanted for commercial purposes, was loaned to speculators, and thus began the system which has brought all the distress upon us which we have undergone. One of the causes of the excessive issues of the U. S. Bank, was the enormous revenues which went into its vaults under the operation of the tariff of 1828. The issues of the Bank were based upon those revenues, and as they were enormously large, it is no wonder that the Bank expanded so much. In a report of the directors of the Bank in 1831, they say that the cause of the excessive exports of specie is owing to the issue of bills under a denomination of five dollars by the country banks,—which drives the specie out of circulation, and causes it to accumulate in large quantities in the Atlantic cities, from whence it is exported, whenever from any cause it may be more wanted abroad than at home, and which would not be the case if it was in circulation. I have no doubt, as far as that opinion goes, it is correct. But if we look at the enormous issues of the Bank, we can come to no other conclusion, than that the state banks would expand in proportion to the U. S. Bank, (which they could do with some safety,) and consequently the more the national Bank expanded, the more the state Banks would also; and the greater amount of specie would be driven out of circulation into places where it would be exported. But my limits will not allow me to dwell upon this farther.

Mr. Stockholm says that, during those years of bank expansion from 1828 to 1832, the farmers and manufacturers were very prosperous. If this be so, let us know why an increase of duties was thought necessary in 1832? Let us know, too, by facts, if grain was higher, or even as high as it is now. I have shown in a former number, that most of the time from 1828 to 1832, it was lower than it is now. How then, could the farmers have been doing better? But again, I ask, how could the compromise act have been so destructive to our manufactures, when since 1836 to 1841, the imports of the woollen, cotton, and iron fabrics have been less than they were during the high tariff from 1828 to 1832? Here are the tables:

Imports of Cotton.

1828,.....	$10,996,230	
1829,.....	8,362,017	
1830,.....	7,862,326	
1831,.....	16,090,224	
		$43,310,797
1837,.....	11,150,841	
1838,.....	6,599,330	
1839,.....	14,699,397	
1840,.....	6,504,509	
		$38,952,117

Excess of imports during the high tariff, $4,358,680.

Imports of Woollens.

1828,.....	$8,097,559	
1829,.....	6,558,235	
1830,.....	5,598,634	
1831,.....	12,608,028	
		$32,872,456
1837,.....	4,243,548	
1838,.....	6,967,530	
1839,.....	10,646,067	
1840,.....	6,246,620	
		$28,103,765

Excess of imports during the high tariff, $4,768,691.

The same is true of iron. Mr. Stockholm and Mr. Lippincott think that a trade free on one side, and restricted on the other, is ruinous to the side unprotected. I wish them to solve this problem. Both of them admit, that when trade is free and carried on upon natural laws that it is best. Now, does it not follow, that the closer we conform to those laws the better, and the farther we depart from them the worse? A tariff on one side, is a departure, and is injurious; but a tariff on both sides is a still greater departure, and consequently must be still more injurious. Two wrongs cannot make a right—the further we depart from the truth, the worse. Another point I wish them to explain. Both complain very much of our over-trading—neither of them will deny that our importers generally pay their debts abroad. They are the wealthiest merchants in our sea ports. The table of imports and exports of specie I have given in a former number, shows that they did not pay any great quantity in specie, and what they did thus pay in specie, immediately returned. The premium on bills too generally speaking, has been light—most of the time they have sold at par; while I am writing they are below par. Now, how do our importers pay their debts abroad? The only answer is, that they pay them in the products of American labor. In no other way could it be done. It is true, foreigners have received much state and corporate stocks, and that is unredeemed. But in redemption of that stock, they will be compelled to take the products of American labor. We have always heretofore paid off our national debt, and state debts in that way, and so we will do again, and in no other way can they be paid.

Mr. Stockholm and Rees say, that the design of a tariff for protection, is not to take laborers out of branches of business in which we have natural advantages to place them in pursuits for which we have no advantages, but that we have advantages for manufacturing as great as other nations. I have admitted that for the manufacture of many things, we have such advantages, but I also assert, that laborers have and will enter into those branches without protection. I also contend that for the manufacturing of many things we have not such advantages, and that the effect of protecting such manufactures will be to injure those branches of business for which we have advantages, by increasing the cost of production in them. (See my last article.) And those branches in which we have natural advantages, want no protection—labor will enter into them without an artificial stimulus. Both Mr. Stockholm and Rees in places admit this Mr. Stockholm says, "what would be the opinion of a farmer, of his neighbor, who should pertinaciously adhere to the production of wheat at a loss, when by producing another article, he might realize a profit of one hundred per cent. He might think him a good neighbor, but not very remarkable for wisdom and sagacity." Sure enough, I agree with Mr. Stockholm here, that the people are not such fools as to work at a loss, and when the business in which they may be in does not pay as well as some other branches might, for which they see we have advantages, they will change their occupations. In another place, however, Mr. Stockholm seems to have lost sight of this idea; for he says that the people without a tariff will not enter into manufacturing—that they will produce so large a surplus that it will rot on hand for want of a market, and that the design of a tariff is to prevent such a surplus. But let him speak for himself. "Is it not equally notorious, that a large portion of the productions of the grain growing districts, (which, without a change of policy, must increase rapidly every year,) seek in vain for an advantageous foreign market? Can it be wise, then, to go on augmenting until the home market shall be completely glutted, and we shall behold our valuable staples rotting in our storehouses."

Thus, Mr. Stockholm must either be understood as maintaining, according to the one view, that no tariff is necessary to divert labor from farming into manufacturing; or giving that up that the farmers cannot see their own interests, and will produce wheat at a loss, and to use his own words, "are not very remarkable for wisdom and sagacity" therefor. Now, he must either agree with me, and stick to his first idea I have quoted, or plead guilty to the charge of calling the farmers a stupid set of men—wanting in wisdom and sagacity. In fact, this is the bottom of the argument of the protectionists—the farmers are stupid—they would not leave farming, though they might make more in another business—they don't know their own interests, and we must have a tariff to cheat them into another kind of business. I have a different opinion of our farmers; they know their own interests better than their legislatures can, and when they can make more at manufacturing than at farming, they will leave the latter occupation. Mr. Rees, in his Oregon illustra-

tion, thinks that the farmers will go at manufacturing from necessity. His colony not liking to run in debt, and not being able to sell as much as they wish, he describes the consequences thus: "They see this, and finding no market for their surplus produce, and no way of getting necessary articles without ruining themselves, they go to work to make their own wares." This is the strongest argument that can be used in favor of free trade. But Mr. Rees qualifies it by saying that a tariff is necessary to protect those who have thus embarked in manufactures, because we have not the requisite skill and capital. Well, I have always heard that "necessity was the mother of invention," and I think that laws which place the manufacturer beyond this necessity, will not be likely to possess him of that skill. England, as I have before shown, never advanced so rapidly in wealth and population as when she felt this necessity. Mr. Stockholm and Rees, in noticing an argument of mine, say that there is not a scarcity of laborers among the farmers. Mr. Rees says that "the country is over-run with laborers applying for work, but we can't hire them." Is this so? I believe the price of labor is higher now than it was from 1828 to 1832. This would not be the case if the "country was over-run with laborers." I had not yet heard that the compromise act had reduced the wages of labor also, but I was under the impression that the price of labor now was higher than it was ten years ago. Without saying any more about it, I will leave it to the farmers to decide who is right. The fact that we produce a surplus of grain does not prove as Mr. Stockholm asserts, that there is not a scarcity of laborers. But on the contrary, it proves that there is a demand for labor in that branch of business. Neither is it true that we cannot dispose of that surplus. Because, if we could not dispose of it, we would not produce it. See Mr. Stockholm's opinion above. He must either admit, that we can dispose of it, or that because (to use his own words,) the farmers will produce wheat at a loss when they have natural advantages for manufacturing and have not the good sense to see it, they are "not very remarkable for wisdom and sagacity;" or in plain English, that they are fools. If Mr. Stockholm won't agree with me that a tariff is not necessary, he must take up with the consequences of so outrageous a slander upon the farmers. Poor stupid farmers—your true interests must indeed be peculiar when some think that they can be promoted only by making the manufacturers consume one hundred per cent more than they sell; and others by asserting that "you are not very remarkable for wisdom and sagacity," and that therefore the government must take you in charge. Ha, ha, ha. A glorious system, this of protection. But to be serious, would the farmers be more prosperous, though not a particle of foreign fabrics was imported. Let us look at the facts. Our exports of grain and all kinds of provisions in abundant years generally run up to about $15,000,000 worth. In 1840, it was $18,000,000 worth. Now, we will say, that it would take about 200,000 men to produce that amount. This amount of grain must be withdrawn from the foreign market, if we will not take foreign goods in exchange; because where productions are sent mostly to the West Indies, and they pay in bills drawn upon the consumers of their coffee, sugar, &c., in Europe; and if we won't take the manufactures of those consumers in Europe, (the only thing they can pay in,) we cannot sell our grain in the West Indies. Our exports of manufactures, lumber, fish, and a thousand other things, more than pay for what we take directly from the West Indies in their productions. Hence, if we will not take the manufactures of the debtors of the West Indies in payment, our manufactures, about $8,000,000 and our lumber and other things must stop going to the West Indies, or our grain and provisions. If our manufactures, lumber, fish, &c., then the market for the farmer is cut off from among the producers of these articles. If our grain is withdrawn, then the producers of it, say, about 200,000 in number, must turn their attention to something else—say manufacturing. Now, we will say, that 50,000 farmers can produce sufficient for the maintenance of these 200,000 additional manufacturers. But when we consider that those who had been engaged in the trade with the West Indies, would be driven to farming or manufacturing, and when we consider that the yearly immigration into the country is from 100,000 to 200,000, and when we consider that the effects of a tariff upon the growers of cotton and tobacco, would drive them and our merchants into farming and manufacturing; and when we consider that much of the labor in these factories is performed by females and children, we can come to no other conclusion than that our farmers have a much better market for their grain in the West Indies where they can sell to 2 or 3,000,000 of inhabitants, than if that trade was broken up, to feed 200,000 home manufacturers.

To prove that 200,000 are sufficient to produce the amount of manufactures we now import from Europe, let us look at the facts.

The quantity of foreign manufactures retained in the country for home consumption is not $80,000,000 worth. In 1838 the total of all goods retained was $101,000,000; but then deduct tea, coffee, molasses, salt, &c., and we will bring it down to much less than $80,000,000. Now, less than 200,000 men could produce that amount. For instance, I find by the census of 1840, that there are engaged in woollen manufactures 21,342, and they produce over $20,000,000 worth; that in the manufacture of leather, there are engaged, 26,018, and they produce over $33,000,000; in the May number of this paper, it is set down at $38,000,000; we will say, however, $33,000,000; that in cotton manufactures there are engaged 72,119, and they produce over $46,000,000 worth. Hence, we have less than 120,000 men producing $99,000,000, or $19,000,000 worth more than we now import and use. Or to make it more plain: It appears by the last census, that there were between 700,000 and 800,000 engaged in manufactures. This included lumbermen, fishermen, and all except those directly engaged in agricultural pursuits, learned professions, and a few other occupations. Now, the value of manufactures was set down at about $500,000,000. Now, if we divide this by 700,000, the number engaged in the production of it, we would find, throwing aside fractions, that each person produced about $700 worth. Now, multiply that by 200,000, and we will have $140,000,000, about $60,000,000 worth more than we now import and consume. Then there are the producers of about $55,000,000 worth of cotton, and $10,000,000 of tobacco,—these articles must go out of the country, and what could we take in exchange for them? The fact is, we would find that instead of importing manufactures, it had become necessary to export about $60,000,000, and again I say, what would we take in payment? Grain manufactures or green cheese? And where would we export them, what nation wants them? I think the farmers would pretty soon want a corn law. It requires a much smaller number to produce a given amount in manufactures than in grain. One reason is that in the cost of the manufactured article is included the cost of the material, the cost of the grain the manufacturer consumed while producing the article, and the interest upon the capital invested. Thus we find it stated in the May number of the Northern Light, that the total value of agricultural products was $694,000,000. In the production of which it is elsewhere stated, are engaged considerably over 3,000,000 of laborers, (the true number is 3,700,000.) While the total of manufactures is set down at $434,000,000, in the production of which are engaged only 7 or 800,000 laborers. In the production of grain, the capital invested is never taken into account to regulate the value, but it is otherwise with manufactures. And when the farmer buys a manufactured article, he must pay back the value of the grain consumed by the manufacturer while producing the article, in addition to the value of the material and the profits of manufacture. These facts show us that a high tariff will break up a market for grain more extensive in the West Indies than we could have at home, though we, manufactured for export, even throwing aside the effects of a tariff upon the cotton planter, and its tendency to drive him into the production of grain. The above facts show us, too, that if we withdraw our present staples from export, it will be only to substitute a greater amount in value of manufactutures. And what will we take in payment, grain, manufactures or green cheese? and where shall we export them, what nation wants them? If the whole continent of Europe cannot help producing a large surplus which it exports to Asia, the West Indies, America and the Islands, can the continent of America help producing a similar surplus—and if the continent of Europe is dependent upon all these places for the sale of its exports, must not the continent of America be similarly dependent for the sale of its exports? And if a tariff here will be injurious to foreign labor, will it not deprive it of the ability to purchase our surplus, and by preventing the sale of that, injure our labor? What can be plainer than this? But let us take yet another view of this point before we dismiss it. Suppose we draw one sixth from farming—computing that number at 3,000,000, (the true number is 3,700,000,) which would be 500,000. Now take one sixth from the agricultural productions, which would diminish it $115,666,666, and leave them at $578,333,334.

Now, suppose the 500,000 produce each $700, which would make $350,000,000. Add that to the present value of manufactures, and we have $784,000,000 worth. Now, where is the quantity over and above the value of agricultural productions to be sold? We see the farmers cannot buy it, for they produce less, by $200,000,000 and upwards—what is to become of it? But look again, the 2,500,000 are to have their living out of the $578,333,333 worth of their grain, &c., while the manufacturers only 1,200,000 in number, are to have a much less amount in clothing &c., out of the $784,000,000. Hence, there will be a surplus of about $240,000,000. Now, what shall we take in payment for this, if exported? Grain manufactures or green cheese? What facts can be plainer than these? they amount to demonstration. But in the agricultural products are included $60,000,000 of cotton, and $10,000,000 of tobacco. Now, the effect of a tariff would be to turn the attention of the planters to raising grain, and hence the market for that article would be poorer than it is now. If Mr. Rees will call to neighbor Bower's mind that from 1836 to 1840, beef was selling at $11, and oxen from $100 to $130 per yoke, he will find a good reason for the over production of beef now. So with pork. I would here observe that the American pork is not so good for the West India market as the Irish, and that to a great extent they compete with us there. I would also observe, that in 1828 the cost of fuel alone of making a ton of bar iron here was $25—in England $2.00. Here we were compelled to use charcoal, which cost four cents per bushel, there they used bituminous coal, which cost about three shillings per ton. What reduction there has since been in the cost of fuel, I have not learned. I have no doubt that in the course of time as the full supply of labor in all pursuits, forces industry into new branches—and as the resources of the country will thus become developed—we will be able to furnish iron as cheap as it is done in England. But until those natural resources are discovered, it is folly to be paying for an article double what it is worth. In all those branches in which we have succeeded, it has not been by the protection of a tariff, but by clearing up our wilds, and thus discovering uncommon resources. The lead mines of Galena furnish an illustration of this kind. Now, we want no protection for lead, but begin to export it. Let these things be left to the course of events and all will go right. A tariff will not lead to the development of our resources sooner and surer. But by premature exertion, we would fail, and the disappointment would lead us to suppose we had not such advantages, and prevent us from seeing and improving them when subsequent events made them available.

My limits will allow me to make only a few remarks upon the notice Mr. Lippincott took of my argument, that a specie currency would not reduce prices. So reasonable was a part of my proposition that he readily assented to it. He agreed with me that the price of articles we export, would not fall. Now, it is just as true, that the price of every article, and the prosperity of every trade, depends upon the prosperity of the producers of those exports. They are the great body of the nation and they furnish the market for all trades. Now, I have before said it is the sale of these great staples abroad which regulates their value. It is because our surplus grain is carried off by foreigners that the price does not fall lower than than it is—and when it is higher it is because there is no surplus. It matters not what the amount of the export is—whether five or one hundred millions' worth; the effect of taking off the surplus, whether great or small, is the same. The quantity does not materially vary the result. Now, this demand from abroad is not affected by our currency. Hence, it must follow, that as the great body of the nation are engaged in producing some one of the articles we export, and that as the price of these is governed not by our currency, but by the demand from abroad—and as these furnish the market for all trades—I say it must follow that they would be just as prosperous under a specie currency. This is the legitimate deduction from the first part of the proposition, and if that, according to Mr. Lippincott's views, was correct, the deduction must be also. In 1832–3, the circulation of paper money was about $90,000,000. In 1836, $140,000,000. In 1840, about $100,000,000. The amount of specie in the country is computed at $80,000,000. I believe it is somewhat more. Now, one-third of this $100,000,000 of paper money is selling at a discount of from ten to fifteen per cent. It appears that in 1840 Mississippi had a circulation of $15,000,000—the same as the state of New-York. Now, if we take into consideration with the above, that if most, or all of our banking capital was judiciously invested in good and productive kinds of business, its owners would add to this circulation by pledging their credit to a limited extent, to workmen, for work done, to farmers for material and grain furnished, based upon the extent and manner of their doing business—their resources, and their individual liability, we can come to no other conclu-

sion than that we would have an abundant currency. The paper of some of our merchants is now more eagerly sought after than state stocks. I cannot resist the temptation to insert here a few extracts from Daniel D. Tompkins' speech to the legislature in 1812. He was a warm—an uncommonly warm friend of the farmers; and if his views may be thought to be erroneous, his honesty of intention cannot be suspected. If there is one of my readers who cherishes his memory, I ask him to read this speech from beginning to end; the history of the banking mania, that has followed it, and then the conclusions to which I arrive, and I will be satisfied with the decision. "One prominent objection which meets us at the threshold of an examination of this subject is, that the banks are the reservoirs into which the specie is collected, and where larger quantities of it are at all times accessable by those who may wish to send it out of the country, than would be the case were the specie left diffused instead of the paper. Bank stock is generally owned by the speculating, the wealthy, and the aspiring part of society. An amount of their personal property, equal to that vested in stock is withdrawn from other applications and appropriations of it, which would probably be more beneficial to the agricultural, manufacturing, and laboring interests. Hence, arises the difficulty experienced by enterprising farmers, manufacturers and mechanics to raise money at lawful interest upon the best security. And hence, it follows that the necessity of temporary pecuniary relief frequently drives them into the embraces of unprincipled avaricious usurers, who fertilize upon the wants and distresses of the needy and unfortunate." "One of the baneful consequences of banks is, the facility with which credit may be obtained by certain descriptions of persons in and near cities and villages, through the medium of a responsible endorser. The fictitious capital thus acquired by a man, inspires confidence in all descriptions of dealers and mechanics, who consequently trust him. Whenever adversity overtakes him, the property on hand, is immediately transferred to the endorser to secure the bank demand. This course is dictated by a sense of gratitude to the endorser, and by a desire to propitiate the good will and future patronage of the bank, and thus it happens that while the bank obtains full payment, more humble creditors who have trusted the insolvent in consequence of the imposing appearances with which that very bank invested him, loose every farthing of their dues. Hence, and not from any defect in the insolvent law as is generally imagined, proceeds the universal complaint that the estates of insolvents yield no dividend to ordinary creditors." I do not quote the above to illustrate the doctrines of free trade—they have nothing to do with the subject. But as many of the correspondents of this paper have frequently asserted that free trade destroyed our currency, and consequently, paralyzed our labor, I wish to show them otherwise. And if Mr. Stockholm will go to the assignees under our bankrupt laws, he will find that the reason debts against those who failed previous to 1841 cannot be collected, is that the bank endorser has all; and the humble creditor must lose every farthing. He will see, too, an enlightened opinion in the speech of the Governor, that banks injure the producing classes. Through the imposing appearances with which the facility of obtaining discounts invested thousands, they were trusted by all, and upon their promises to pay, thousands of contracts were made and believed to be good, but when the banks pressed the debtors, they failed, and all the contracts which were made with them, and all which were based upon those contracts were broken—and a deep, far-extending and universal bankruptcy was the consequence. To this we must attribute our embarassment—not to the compromise act. Banks cannot create prices—cannot sustain them. They may for a time raise the price of an article higher than the natural one, and particularly so in unproductive property. But the products of labor are continually increasing, and this increase would prevent a permanent price higher than the natural one. It also withdraws many individuals from producing, and turns them into speculators. These pass the article from one to another—each holding on in hopes of an advance. Thus before the article gets to the consumer, a new supply comes rushing in, and by adding to the quantity, which under any other system would have reached the consumer long before, destroys the speculator, and the increased quantity diminishes its price. The increased price too, prevents consumption. I do not understand Mr. Lippincott's remarks upon my illustration of the effects of a specie currency in England. The price of labor does not depend upon the price of an article alone, but that price compared with the cost of production. The price of imports, and of grain in England, would fall by a reduction of duties, and consequently the cost of production would diminish greatly, but not so the price of the article manufactured, for that would not fall below the exporting price. Think again, Mr. Lippincott.

Note. In a former number I stated the English duty upon our cotton to be three cents per pound. Up to 1834 it was 9s. 7½d. per one hundred weight, or about two cents of our money per pound; in in 1834, it was reduced to 2s. 11d., and the revenue derived from it is between £400,000 and £500,000. Since writing the last article, I have observed by looking at the tables of imports and exports, that whenever our manufacturers complained most, the crops were unusually good—the exports of grain very large, and the price diminished. It was so in 1825—31—41. The large crops diminished the price, and caused the contraction in the market, for manufactures, as I have before shown. The effect of bank paper in aggravating these natural contractions, I will leave my readers to imagine.

New-York, Aug. 1842.

Agriculture.

[For the Northern Light.]

REPORT OF THE WEATHER, CROPS, &c.

BY C. N. BEMENT.

THE first ten days of this month was characterized by frequent showers, with southerly winds, after which, until the 14th we had warm and pleasant weather; in the afternoon of the 14th we experienced a thunder storm, which finally settled down at night to a steady rain, with sharp and vivid flashes of lightning. The storm continued through the night and next day, with now and then a few moments cessation. We now had fine warm dry weather until the 19th, when we had a slight shower in the morning, and on the 24th we experienced quite a severe shower, accompanied with violent wind, but of short duration, when it suddenly changed from south to north, and cleared off cool; after which, we had fine, and some very hot weather, until the night of the 30th, when we were blessed with quite a shower, and on the 31st a copious rain, which was much needed for our growing crops.

The frequent showers which occurred in the first part of the month, had a tendency to push forward vegetation of all kinds very rapidly, particularly grass, which had made but slow progress in the months of April and May, in consequence of which it was not ready for the scythe as early by two weeks as it was last year. Very few commenced mowing until the 15th, since which the weather has been as favorable as could be desired, and the hay has been got into the barns with great dispatch and superior condition; crop full an average one.

Rye, from all accounts, is generally very good, both in straw and grain—much better than it has been for many years past. I was shown some stalks which grew on the farm of the late Judge Buel, which measured seven feet three inches in length, heads long and well filled with a large, plump kernel.

Wheat has been secured in good order, and although not as tall as the rye, was a heavy crop—too luxuriant in rich soils. We hear some complaints of *rust*, and some depredations of the *grain worm*, on low ground, where it has been much retarded by wet, but the early sown and that on dry ground, escaped the fly, and taken altogether, may be said to be a very good crop. While we are blessed with good crops of wheat in this section, which has been denied us for the last nine years, in Maryland and Virginia, the sanguine expectations of the farmers, in the early part of the season, have been to some extent, disappointed. In some sections, it is said the crop will fall short fully one-third in consequence of the rust. Some complaints have also reached us from the western parts of this state, as well as Ohio, of the same cause. Still it is conjectured that this year's crop will be more abundant, generally, than any heretofore produced. In Dutchess, it is said wheat, with the exception of sustaining some injury by rust, which has caused the berry to shrink a little, never was better. In New Jersey and Pennsylvania, the long continued rains in the latter part of June and first part of July, have not only injured some of the most valuable crops, but have scarcely given the farmers an opportunity to gather in their produce. There was scarcely sunshine enough to make hay, and I am advised that the crop, which was abundant, was much of it secured in a damaged state. A number of fields of wheat, in the immediate vicinity of Philadelphia, owing to the unusual quantity of rain, accompanied by high winds, were completely prostrated, and the sickle and scythe have been used instead of the cradle. The rust in some fields also, has done some damage.

Cradling grain is one of the most laborious operations on the farm, and yet there is no part of the work performed with more willingness or greater glee; there is something so graceful and manly in the movements of a good workman, that I always *look on* with admiration, and wish I had ability and strength sufficient to join them. It requires great strength in the arms and considerable bodily exertion to swing a cradle all day.

Barley, in this section, is now safely stowed away in the barns, and from all accounts was secured in excellent condition; being full, plump, and of a bright color, excellent in quality, and crop generally good.

Oats are now getting ripe, and never promised better—heads large and well filled—straw bright and of good length, and from all appearances will be a great yield.

Corn, which in June, promised all but a failure, has come on remarkably lately, and improved greatly. Still, an average crop can hardly be expected. Potatoes and roots of all kinds, are very promising, and great crops are anticipated; in short, we have every reason to be very thankful to a generous Providence, for his gifts of bountiful crops.

Our farmers are now in the midst of their haying, and should they be favored with as glorious weather for the next ten days, as the last, they will secure the principal part, and the yields will be full an average crop.

"*July*, the fifth month of the Roman Calendar, in consequence, the name of *Quintilis*, to denote its numerical position. It was sacred to Jupiter, and had in the Alban Calendar, thirty-six days. Romulus took from it five days. Numa reduced it to thirty, but Julius Cæsar enlarged it to thirty-one, the present number. In honor of this conquerer, Mark Anthony changed its name from *Quintilis* to *Julius*, hence our July. Our Saxon fore-fathers, who commonly named their months from certain natural appearances or events, demonstrated this month *Hew monath*, or *Hay month*, since this was their hay harvest. They also, from their meadows being then in flower, called it Mead monath. In Holland also, in the days of the Republic, this was demonstrated *Hoomaand*, or Hay month."

Three Hills Farm, July 1842.

[For the Northern Light.]

SOME NOTICE OF AN ARTICLE IN THE NORTHERN LIGHT FOR MAY, BY J. A. DIX, UPON THE FARMING INTERESTS OF THE UNITED STATES.

BY THEODORE S. GOLD.

I regret that a writer whose opinions are maintained with so much ability, should have manifested so lively a zeal in behalf of a cause that in my view, is hostile to the real and permanent prosperity of the country. In my notice of his argument, I rather aspire to present objections than a refutation, to point out what may appear to me unsound in his doctrines, than to establish my own.

After a brief notice of the enviable condition of the farmer, he remarks that the business of exchange with him is rather a matter of convenience and profit, while with the merchant it is one of necessity. However correct this statement might have been originally, it certainly is not so now. The articles of the mechanic and manufacturer are essential to the comfort of the farmer, their constant use have rendered them indispensable, and he values his products chiefly because they enable him to command them. To bring himself into the position that the writer assigns him in this remark, he must lay aside his shoes, calicoes, hats, carriages, dining sets, looking-glasses, his fine linen and cotton, broadcloth and silks, the works of the mechanic and manufacturer which convenience and pride have made a second nature to him. The sounder and more wholesome doctrine to inculcate on this question in my judgment is, the mutual dependence and connection of these classes and their identity of interest in the same national policy.

The interest of the farmer, says the writer, is to obtain the manufactured article at the lowest possible price. This is true, at the cheapest rate to *him*. The first thing to be done is to dispose of his produce, and to obtain the means of purchase. Now is it better policy for him to send his grain abroad, where a heavy duty is levied on it, so as to reduce it below the cost of production as he values it, and obtain his manufactured article at a lower price, or to sell his grain at a profit at home, and pay comparatively a large price for goods? I do not understand the lowest price to the farmer to be what is arithmetically so; his means of payment must be taken into consideration. If he is obliged to sacri-

fice on his product for exchange a greater amount than he gains in the price of his purchases, it is not his interest to buy of them who sell nominally the cheapest. If the English grain buyer will allow him six shillings a bushel for his wheat, and sell him his cotton sheeting for five cents a yard, and the American manufacturer allows him a dollar a bushel for his wheat, and charges him six cents a yard for his sheeting, it is his interest to trade with the latter, although he is nominally the dearest. This is a fair illustration of our situation with relation to England.

The writer then takes the ground that the proposition advanced by the manufacturer, that by excluding the manufactures of other countries, we create a market at home, is not sound. His reasons succinctly stated are: The farmer possesses the home market now—he would pay advanced prices for his goods if we exclude foreign fabrics—the imposition of the duty varies the price of the article to the amount of the duty imposed—the establishment of an 100 additional factories would make but little difference in the market for produce; there would be no more persons employed in factories than if on farms. I shall notice these reasons rather collectively than *seriatim*. In reply to his first position I would state, it is true that the farmer now possesses the home market. He may at this moment congratulate himself on this fact, as the eastern factories consume a large portion of his flour, or otherwise it would fall to the level of other kinds of produce. The more legitimate reply to the writer on this point is, that the effect of manufactures is to increase the density of population; it enables men to marry and support families who would not otherwise undertake so serious an enterprise on the profits of farming. It converts the producer into a consumer, from an agriculturist he becomes an eater, instead of providing for himself by his own toil on the earth, he calls on the farmer to supply him, and pays him therefor in his manufactured fabrics. The demand for a product supposing the supply to be the same, depends upon the number of consumers. If you diminish the number of consumers, the demand will slack; if you increase them, it will rise. Now if we take two hundred and thirty thousand men from farms, and place them in factories, will it not diminish the amount raised just so much, and be equivalent to an additional population of so many souls? The home market for grain which we have now, composed of the number of men above mentioned, and families and children, increasing the number to half a million, is surely a different one than if those same 250,000 men continued to cultivate the earth. In one case they raise their own food, in another they buy it.

It is true (coming to the next point,) that the farmer pays a higher price for his goods, if foreign fabrics are excluded. From the low price of labor in all departments, particularly in the manufacture of his machinery, and the cheaper rate of capital, the Englishman is able to undersell us. To encounter him successfully and boldly on his own ground, we must reduce our wages to those of the foreign standard. This we must do, according to the views of the writer, or rather the inference is forced upon us by his positions. But this reason is in truth embraced in the preceding one. The farmer nominally pays a higher price, supposing the deal to be carried on with cash only, but if he measures the price by the number of bushels of wheat or pounds of wool it takes to procure the foreign fabric, he will find the American article the cheapest. If, as the writer assumes apparently they level his article, the farmer could sell his grain at a fair price, and purchase the foreign fabric at its price; the trade would be a good one. The difficulty is that he cannot obtain a market for his produce except from the manufacturer; John Bull shuts him entirely out unless he pays a high tribute, and his only resource is to create a market at home. This nominal cheap price is, I am aware, a stumbling block to many a farmer, but if he will look to the selling price as well as the buying price, he will have no difficulty in deciding correctly. What is the state of things according to this writer? The farmer under no circumstances can get admission into the foreign market, with his products, because it can be supplied nearer home cheaper, and he cannot have any market at home, except that which is supplied by agriculturists alone, any man raising his own food, and this too with an unlimited supply of grain land. If this is so, the prospect is gloomy enough, but we contend that this reasoning is radically erroneous.

We now come to another of his positions: that the erection of the 100 additional manufactories, would have no effect on the produce market. He intends to convey the opinion as I understand it, that no reasonable increase of the manufacturing capacity of the country, would have any perceptible effect on the grain market. If the policy to support American labor by duties is firmly established and permanently sustained, we must look forward to the time when the manufacturing resources of the country will be immensely developed. According to the returns of the late census, we have invested on manufactures two hundred and sixty-eight millions of dollars nearly. Will not this amount in its various forms of developement and diffusion, in the manufacture of cotton and wool, paper, machinery, metals, leather, furniture, flax, &c. &c., in increasing and accumulating population, affording a market for cotton and wool, supplying the resources of living to an increased number of persons, in raising up villages and adding to the value of locations, in supplying the objects of taxation to government, and reliance in war, influence in no favorable respect, the interests of the farmer. According to the census we have 500,000 persons employed in manufactures, about 230,000 of whom are rated as men. According to McCulloch and the authorities whom he cites and highly recommends, every person in the community, old and young, of different pursuits and conditions, consumes eight bushels of bread-stuffs annually, reduced to the standard of wheat. This would make for the number of persons now employed, four millions of bushels. Now, these persons who consume this four millions of bread-stuff, raise no part of it. If these were not manufacturers they would cultivate the earth, and support themselves out of it, and of course they operate practically as an increase to the population, to this number. Strike out of existence this source of demand for the bread stuffs of the west, and the vibration would be felt from Western New-York to the Mississippi. Can any one believe that Great Britain could sustain her population without her manufactures, or that the manufacturing population have no effect on the farming interests of that country? Mr. Dix affirms likewise, that the increase in the manufactures of the country would not affect the demand for wool, that the price of this commodity would be effectually kept down by competition, as well as that of grain. He uses the expression "kept down" several times in reference to wool and grain, without, however, distinctly explaining what he intends to convey by it. If he means to say that it will be kept down to the cost of production, even if the manufacturing policy is sustained, surely it will not pay the cost, if it is not. If there is no tariff to support the producer, and no foreign market, it is manifest that the grain market will be permanently kept down to the cost of production on average soils. But if a fair protective tariff is established, and rigidly adhered to, may we not expect a steady increase, in the manufactures of the country, and rationally anticipate that in twenty years from four to five millions of people may be employed by them. This number would afford a demand for from 32 to 40 millions of bushels of bread-stuffs, which, if the theory I support is correct, will not only sensibly affect the grain market, but prove the main reliance of the farmer. The conversion of this number of persons from producers to consumers, together with the effect of manufactures in adding to the means of support, and thereby quickening the growth of population, must not only affect the agriculturist, but add immensely to the wealth and power of the country. We must, in discussing this question, look at the policy of other nations;—the Germans composing a large portion of the population of Europe, are busily engaged in organizing a system of protection for their own manufactures. This fact adds authority to the statements of the manufacturer, and points out to us as worthy of observation, what policy other enlightened nations deem will best subserve national interest, and increase the comfort of their people. In the same number of the "Light" in which this article of Mr. Dix is published, I find what appears to me to be a material fact in this controversy. It is there stated that the annual proceeds of our manufactures are three hundred and ninety-five millions three hundred thousand dollars, while that of agriculture is stated at about 290 millions more. Yet an interest which in its cradle adds yearly this amount to the national products, is decided by this writer to have no effect in the production of bread stuffs. The woollen manufacture alone is given at twenty millions annually; now would the article of which these goods are made, meet with the same demand as if they were not made. Would not "kept down" have been a very different signification if this demand for wool was cut off?

The writer then advances the opinion that the duty raises an article imported to the amount of the duty imposed. However specious this doctrine may appear, it is controverted by experience. If it did not so affect it, it may be said, I am aware, that it would not answer its designed purpose of protection. The first effect of a duty is thus to raise the article; this imparts increased ativity to the manufacture, and competition subsequently brings down the price. The manufacture soon gets established when the duty can be safely reduced. This is, and has been the effect of a high duty on leading articles. Here I will remark, that although the writer assigns great weight to the competition that must take place among the grain producers, he makes no mention of the effect of competition among manufactures. The cotton manufacture of this country, except for a few descriptions of goods, is supposed to be able to compete against the foreign fabric in the ordinary fair course of trade. But the convulsions and derangements of trade which disturbed the rival country, would without question, at times seriously affect this branch of our manufactures. We must make some allowance too, for a combined effort by foreigners to prostrate this interest, should the market be thrown open; this is not extravagant to anticipate; the cotton interest in Great Britain is very wealthy, and is now struggling to sustain itself. A paragragh then succeeds, which is certainly inconsistent in its scope, if it does not clash in precise terms with the position above stated. The writer admits the necessity of supporting the manufacture of articles essential to the public defence, and of the principal necessaries of life. The doctrine under which this concession is made, is "general consideration of policy in which the farmer is embraced with other portions of the community." This is one of the grounds on which the friends to American labor have advocated duties, and the concession made by the writer if liberally construed, would go far towards satisfying the tariff man. I am disposed to believe, however, that the sense of the country would not sustain a tariff on this ground alone, if the doctrine which is sustained by the tariff man, that by the adoption of a tariff we secure a market for our produce, was not materially relied on.

In the succeeding paragraph he takes the ground that domestic manufactures "should spring up gradually as the condition of the country warrants their introduction." The condition of the country here referred to, I take it, is the growth and increase of the country and the demand that naturally grows out of the diffusion of wealth. Suppose that we had not hitherto established any system of protection, but had left the country open to the influence of events in the development of its resources. No impediment being presented, foreign goods are freely introduced, and come into general use, what chance is there for any manufactures to spring up? The foreign manufacturer commands labor and capital at half the price we can; he of course keeps the market supplied to its utmost capacity. Under such circumstances can we expect any variety of manufactures to spring up? In what nation has this experiment ever succeeded? In what country has it ever been adopted?—What authority does the history of the rise of manufactures in any country impart to this theory? How such a scheme can be rendered even plausible, I cannot imagine. There is only one way in which manufactures can spring up, as is assumed by this writer, without restrictive regulations, and this is by bringing down the price of American labor to that of European. We can then fairly meet our rivals on their own ground. Our laborer must then work in the factory for from 15 to 30 cents a day, and live accordingly; we shall then see that "condition of the country" presented, which, perhaps, the writer had in his eye, estimating the introduction of domestic manufactures. In the same paragraph, the writer alludes to the pernicious influence of duties, and points us to England as illustrating in the destitute situation of large masses of her laboring population, in enormous imposts and excise, in extensive poor-houses, the consequences certain and inevitable, of such a policy. Before giving way to such gloomy prognostications, let us inquire whether the English laborer has been reduced to this condition by restrictions on foreign fabrics? The national foreign policy of the English has plunged them into frequent and expensive foreign wars; this has rendered taxes and impositions in every form necessary. She levies duties on articles of consumption and necessity as well as manufactured fabrics and luxuries. Now, does the English operative complain of the duties levied for his own protection to secure him the market at home, or does he arraign the justice of the impositions on the necessaries of life, on flour, barley, rye and potatoes, beef and pork, which constitute his food? The smallness of the British territory and the density of the population, render a supply from her own soil impracticable; the workman cannot, however, eat foreign bread, for his is included. But how is the fact with us? We have, as the writer remarks, a boundless extent of territory, and the competition among the grain producers will permanently prevent bread-stuffs from reaching any extravagant price. If, then, the American manufacturer has this home market allowed to him, with no

prospect of any advance in his food beyond his means, he cannot complain; while the agriculturist certainly never can be driven to the poor-house by the high price of domestic fabrics, because before coming to this, having an abundance to eat, he can manufacture his own wear. This is throwing out of view the effect of competition in keeping down the price of goods.

The duty, says the writer in a succeeding paragraph, to be protective, must be prohibitory; this position I do not consider sound. If this was the case, revenue and protection could never be secured by the same tariff of duties. The design of protective duties is not to exclude the foreign fabric, but to burthen it with such an imposition as to render its introduction more difficult and less profitable. Suppose calico imported from England, free of duty, which costs one shilling per yard, call the duty two cents, this makes the article cost 14¼ cents per yard. I contend that the British article will continue to be imported in limited quantities, but the hazards of the market are such, that it will not be freely introduced. The American manufacturer although his article is the highest, yet being near the market, and able to mark its ebb and flow, to gain access to it promptly, to avail himself of it without loss of time, he will sustain himself against the lower priced article, but cannot advance his price, as then his rival would glut the market. We have constantly levied duties on foreign fabrics, and yet the the manufacture of the same article has continued to exist. To prohibit the importation of foreign fabrics is to cut off the market for domestic products to the same extent. How are we to apply this remark practically? I cannot see, as we send nothing abroad of any account except cotton, and this is received only because it cannot be supplied from any other quarter. To make herself independent of us in this staple, England is actually employed in increasing the production of East India. The supply from this quarter and Egypt is increasing with rapid strides. But it seems from the writer that we have a circuitous market to Europe by the West Indies. This trade is neither so large or so regular as to supply any considerable market for our bread-stuffs, besides a portion, and the principal portion of her productions comes into collision with our produce—sugar and molasses. Such a trade certainly cannot be permanently desirable. The South American trade is still more precarious and delusive, as far as our bread-stuffs go; we cannot expect any long continued market in that quarter, as they can raise all the varieties that we can. Besides the internal agitation of that portion of the continent has been such, that I question whether our commerce with it has ever been profitable.

The writer then assumes that we are compensated by the southern market through cotton, for the loss of the English market. This market is comparatively narrow, a small portion of the south only supplying us any market for bread-stuffs. A large portion of the proceeds of southern produce is of necessity expended at the north in payment for our goods, and various objects; a portion of it does really in the end furnish us with remittance or means of payment, but when we consider the precarious condition of the culture of cotton, and the market lost to the grain-producers by the English fabric, which prevents the manufacture of the American one, with its attendant advantages as a grain market, we cannot view this suggestion as entitled to great weight. The writer looks upon the proposed tariff of Sir Robert Peel, as reaching the argument in favor of protection. To all purposes practically, the market of England is as effectually closed as ever: we can obtain no access to it. How much lower too, is it probable this tariff will be reduced? Will the government debt, or the influence of the land owners allow of such a reduction as may render the market accessible to our produce? Let us too, in closing this, notice the precarious value of a foreign trade, its liability to derangement from commercial jealousy, and views of national policy, the bad consequences of a dependance on a foreign nation for any large amount of supplies in any shape. An interruption to the trade inflicts a deep wound, in case of war, it actually cripples the dependent nation. Consider the injury resulting to our currency from a large foreign debt. At times, as last fall, our banks were driven to the verge of bankruptcy, by a call for specie, and such an event is felt throughout the country. Our embarrassments this moment are attributed, and I believe correctly, mainly to a foreign indebtedness.

The Cattle Show and Fair of the New-York State Agricultural Society is to be held in the vicinity of the Bull's Head Tavern, on the Troy road, in the last week of September next.

[From Blackwood's Edinburgh Magazine.]

SCIENCE AND AGRICULTURE.—[Concluded.]

The second part of the *Lectures* is devoted to the inorganic constituents of plants, and to the geological and chemical relations of soils. We shall first complete our survey of the newest views in regard to the food of plants. We have already adverted to the fact that the various parts of vegetables, when burned in the air, leave behind a comparatively inconsiderable proportion of earthy or incombustible matter. Such is the common woodash, and such the ash left when heaps of weeds or the parings of our grass fields are burned. What is the use of this incombustible matter—what purpose does it serve in the plant—whence is it derived? Is it only present by accident—or does the healthy plant always contain it? Is its quantity constant, and does the same plant always yield the same kind of ash? For an answer to all these questions we must refer the reader to the works before us; but it will be interesting to trace the progress of opinion upon this branch of vegetable chemistry—not only because the subject is exceedingly curious in itself, but because the present state of opinion on this subject is connected with all the recent improvements in agricultural practice, has suggested many of them, and is now directing the enlightened farmer, often unconsciously, in all his most promising practical investigations.

The ash of plants, until a very recent period, was considered by the vegetable physiologists—who, indeed, esteemed themselves the judges paramount in this domain—as accidentally present, or at least as performing no important or necessary function in reference to vegetable life. No account was taken of it, therefore, in theory; and in practice—little as some may think agricultural practice in past times to have been affected by theory—in practice this opinion of the physiologists led to the adoption and justification of the most pernicious system of husbandry; for they naturally reasoned thus: If the organic combustible part of plants be the only important, vital or essential portion, then of manures such as are prepared in the farm-yard, it is also the only essential part—and in soils the vegetable or animal matter—the combustible parts of them, that is, which alone supply the plant with organic food,—must likewise be the only essential portion. Accordingly, vegetable manures, or animal excrements, directly derived from vegetables, were alone considered necessary to fertilize the land and to feed the crop; and the vegetable matter in the soil was esteemed to be at once the source and index of its agricultural capabilities. So firmly rooted was the opinion, and so widely spread, and so long has it lingered among practical men, that some of our readers may, even while they peruse these sentences, be unwilling to acknowledge, or have had no opportunity of being satisfied, that it is entirely erroneous. However, among other errors in practice, it led to the total neglect of the inorganic or incombustible part of the crops carried from the land. It was supposed that if a sufficient quantity of vegetable matter was always kept in the soil, there could be no harm in carrying off what the land produced, or in neglecting that part of the crop which was of no economical value for any other purpose. We might illustrate this by a reference both to still existing, and to many now exploded practices among ourselves, but we rather advert to a custom prevailing among our transatlantic brethren, as described in the very interesting work of one of the best race of our own existing practical farmers. They grow wheat, sell the grain, and either burn or otherwise waste the straw. After wheat they grow clover, which they never cut, but plough in for green manure. The vegetable matter in the soil is thus kept up, all the conditions of the old theory are fulfilled, and yet the land is inevitably going to ruin. The father may not be aware that he is eating sour grapes; but the children's teeth are sure to be set on edge, nevertheless.

Again, our West India planters, on their estates in Jamaica and elsewhere, find the land impoverished, and they hardly know why. There may be special local causes by which it is aided here and there, but the main cause is the same as in the United States. The canes are deprived of their juice in the mill, and the trash, as the refuse canes are called, is then burned to boil the sugar. The ash they leave is often considered as worse than useless—it is only a troublesome refuse.

Can any one doubt, after such examples as these, that all our practice is modified, and has been modified by theory, either for good or bad? Not that theory has at once said to the farmer, do this, and he hath done it, but the opinions of the vegetable physiologists gradually became a part of the general stock of knowledge among all well-informed men, and through them, gradually influenced the agricultural practice in every country of Europe.

Then these same theoretical opinions led to curious shifts and contrivances in nomenclature. It was now and then observed, that the addition of inorganic matter to the soil, of wood and peat ashes, of kelp, of saltpetre, and a score of other things, produced a remarkable effect upon vegetation—increased the crop—hastened its growth—gave a heavier return of hay, of straw, and of grain. Was the plant fed by these things? Not at all. These were not manures, they were stimulants. And so we had some substances which were neither manures nor stimulants, but acted by fermentation; while many other like shifts were made necessary by the advance of knowledge, not a few of which still linger among us, and will linger, standing in the way of sounder views and a safer practice, till another generation sees the light. And among the men upon whose minds these shadows of old opinions thus still rest—who have begun to ascend, but have not yet escaped from the mists of the valley—from these men we hear the opinion sagely propounded—"Chemistry must be content to follow—she cannot lead in agriculture." But this is mere fudge; agriculture, above every other art, is accustomed to be led by theory. Every little farmer has his foolish fancies, which direct his practice; and it is only to be lamented, that while so willing to be led, she has been accustomed to listen more frequently to the voice of the mere empiric, than to that of the sound philosopher.

So far as we have seen, she was led by physiology, and into what difficulties;—let us now see what she has begun to think since chemistry took her by the hand, and began at once to teach and to guide her. The ash of plants was the first object of study. Little came of the early analyses of De Saussure. They were inaccurately performed, and it was well that no attempt was made to deduce any important natural consequence from them. But the resources of chemical skill increased, and better instructed men turned their attention to the subject. Sprengel we may mention as the most indefatigable in this line, and one who has mainly contributed to the establishment of the received views—though we may also add, that the highest analytical skill has never yet been enlisted in this cause. These analyses proved, that the notion of the organic being the only essential part of the vegetable, could no longer be entertained; that earthy matter was also essential to the existence of the plant; and that, in each species of plant, and even in each part of the same plant, the earthy matter was present in a quantity peculiar to itself, while the quality or kind of matter of which the ash consisted, was also different in different plants, and generally special in each. Well, this being proved by chemistry, what followed from it? Why, that the old physiological doctrine about the essential nature of the vegetable matter, had only looked at the subject with one eye, that now the chemical doctrine opened the other eye, and the plant was then seen to consist of two essential parts—an organic and an inorganic part. But how did this affect practice? Why, thus—the old races of stimulants and fermentators, and all the rest of them were dismissed. The plant has an inorganic part which must be fed, and must grow by the aid of inorganic food—it must have mineral food as well as vegetable food. From this it further followed, that vegetable manures, if they make plants grow, do so, not because they supply organic food only, but because they contain, and are able to supply, inorganic food also. And again, mineral substances made a plant grow, not by some hidden mode of merely stimulating it to take up and appropriate a larger portion of the vegetable matter which had been applied to its roots, but because it actualy entered into its substance, and supplied that inorganic food which was not previously within reach of its roots.

Thus in regard to the soil, it followed from the same doctrine, that mere vegetable matter might be increased to any amount, as by ploughing in green crops, &c., without its being possible to save the land from ultimate barrenness, if crops were continually carried off, and nothing—no mineral matter, that is—restored to it. Let the American farmers burn their straw,—and top-dress their soil with the ash; and though they do not convert their straw into manure, as in our fold-yards, yet, with the aid of their green clover, their land may retain its fertility for half a century longer, without the addition of foreign manures. Let the ash of the cane-trash be used to top-dress the young canes, or be put in the the holes about their roots, crushing it first when it happens to be melted, and though past mismanagement may not be repaired, further exhaustion will proceed with infinitely greater slowness. We have a word for our Indian empire too: Let the indigo planters return the refuse of their leaves, when their indigo is extracted, to the fields from which they were gathered, and we assure them from ex-

perience, that their lands will not fail them half so soon.

But further than this still the same chemical doctrine goes. It has been found, that the ash of nearly all plants contains about eleven different incombustible substances, in greater or less quantity, all of which can be derived from the soil only. To produce a healthy vegetation, therefore, the soil must contain all these, and as the most valuable plants, those we raise for food, take up these substances in different proportions, some, for example, requiring more soda, others more potash or lime, it is clear, that to grow any of these plants, the soil must contain an especial supply of that substance, which the species we select may happen to require. And so, when we sow our selected seed, we are safe so far in adding to the soil a portion of that substance, at the same time, by way of a manure; and safer still, if we have previously ascertained the soil to be deficient in that substance,—while on the other hand, if the soil be destitute of it, and we cannot obtain a supply, we need not sow our seed. If, for example, the soil contain gypsum, or sulphate of soda, or sulphate of magnesia, it will grow red clover; if it contain none of these, we need hardly sow our seed, unless we can add some sulphate or other along with it. The whole theory of mineral manures was first, we believe, systematically treated by Lampadius; it was subsequently expanded by Sprengel, in one of his valuable works; and though it has not yet generally diffused itself everywhere, it is rapidly assuming the direction of all agricultural improvements among ourselves, and the works now before us will serve an important purpose, in making generally known among practical men the nature and important practical bearing of the new chemical agriculture.

But the consequences of the same chemical doctrine of the essential nature of the incombustible constituents of plants, lead us still further, to what appear more remote; yet are still necessary and very curious truths. The soil draws its supplies from the manure that is added to it—the plant takes them from the soil—the animal from the plants it feeds upon—and if it increase neither in size nor weight, it returns all the mineral matter to the soil again, in the form of manure. Here is a beautiful circle of natural operations, connecting together the living and the dead—the animate with the inanimate—the plant with the animal, in one common and mutual dependence. The theory, therefore, that throws new light upon one of these branches, will illuminate all. If the soil do not contain all that the plant requires, either the plant will die, or it will lead a sickly life. If the plants, again, on which it feeds be deficient in some one substance which is necessary to build up the various solid and fluid parts of the animal, it will also pine away, and sooner or later die. So that, on the constitution of the soil is dependent the health and life of all the animals that are fed upon its produce; in other words, the same chemical doctrine extends its influence to the feeding of stock, and must in future (insensibly, it may be, but surely,) modify all our notions regarding the feeding of animals, and direct to the wisest, safest, best, and most economical management on the part of the breeder and feeder of cattle, as well as of the arable farmer and grower of corn.

Space will not permit us to dwell longer on this subject, otherwise it would have been curious to follow the progress of opinion in regard to the uses of the soil; of what it ought to consist, and on what its fertility depends; from the time when, half a century ago, Ruckert gave forth the view, "that a soil must contain all the substances which are found in the decomposed plant, and that, on the presence of these in the soil, its fertility must in some measure depend;" through those puerile times, during which the Berlin Academy gave a prize to one of its members for proving that these earthy and saline substances were actually formed in and by the plant; to the very recent period when Crome and Schubler again taught, that the fertility of a soil depended mainly on its physical properties. But there remain two or three other topics to which we are anxious still to advert, and we must, therefore, content ourselves with expressing our entire concurrence in the old doctrine of Ruckhert, established, we may almost say, by the experimental researches of Lampadius and Sprengel, supported by the opinion of Liebig, and fully and practically brought out by the author of the works now before us.

The connection of geology with agriculture, as we have already stated, was in some measure foreseen and touched upon by Davy. It has also attracted the attention of some of the German writers; but in so far as we know, it is not treated of in a systematic manner in any existing work, either English or foreign, with the exception of the lectures on agricultural geology now before us. There are considerable difficulties in the way of establishing a close connection between the soils of a country and the rocks of which its surface is composed, though there can be no doubt that the general agricultural character of every extensive district is dependent upon that of the stratified or unstratified deposits on which the district rests. Thus, after giving a detailed description of the nature of the soils formed from the stratified rocks of each geological period, and of the localities where such soils are seen in our islands, our author concludes with these observations:

"The consideration of the facts above stated, shows how very much the fertility of each district is dependent upon its geological structure—how much a previous knowledge of that structure is fitted to enlighten us in regard to the nature of the soils to be expected in any district—to explain anomalies also in regard to the unlike agricultural capabilities of soils apparently similar—to indicate to the purchaser where good or better lands are to be expected, and to the improver, whether the means of ameliorating his soil by liming, by marling, or by other judicious admixture, are likely to be within his reach, and in what direction they are to be sought for."

We recommend to the attention of our readers the sections upon the granitic and trap rocks, and the soils formed from them, in which, by the united application of geological and chemical knowledge, many agricultural problems in connection with the soils of these rocks, which to us, at least, have heretofore appeared either difficult or anomalous, are solved in a way which has struck us as at once novel and highly satisfactory.

But the main difficulty which has always presented itself to geologists, in their attempts to connect soils with the rocks on which they rest, has arisen from the fact, that beneath the soil, and separating it from the subjacent rocks, there often lies a great thickness of sand, gravel or clay, consisting of materials drifted or otherwise brought from a greater or less distance. As on these accumulations the soil rests, it must be modified by them, it must in reality in some measure derive its character from them. Of this difficulty our author thus speaks—

"Abundant proof, I think, has now been advanced that a close relation generally exists between the soil and the rocks on which it rests, and that the geological structure of a country, as well as the chemical constitution of the minerals of which its several rocky masses consist, have a primary and fundamental influence upon the agricultural capabilities of its surface.

"And yet I should be leading you into a serious error, were I to permit you to suppose that this intimate and direct relation is always to be observed—that in whatever district you may happen to be, you will find the soil taking its general character from the subjacent rocks—and that where the same rocks occur, similar soils are always to be expected. On the contrary, in very many localities the soil is totally different from that which would be produced by the degradation or decomposition of the rocks on which it rests. To infer, therefore, or to predict, that on a given spot, where, according to the geological map, red sand-stone for example prevails, a marly or other red sand-stone soil will necessarily be found—or that where the coal measures are observed, poor, ungrateful land must exist—would be to form or to state opinions, which a visit to the several localities would in many instances show to be completely erroneous—and which would bring undeserved discredit upon geological science.

"In such cases as these, geology is not at fault. New conditions only have supervened which render the natural relation between soils and rocks in thos. places less simple, and consequently more obscuree Yet a further study of geological phenomena removes the obscurity—shows to what cause it is owing that in many districts the soil is such as could never have been formed from the subjacent rocks—again places the enlightened agriculturist in a condition to pronounce generally from what rocks his soils have been derived—generally also what their agricultural capabilities are likely to be, and by what mode of treatment those capabilities may be most fully developed."—*Lectures*, p. 389.

He then considers the question of drifts, illustrating his views by diagrams exhibiting the mode in which those superficial accumulations overspread the eastern half of the county of Durham, and thus concludes his observations on agricultural geology:

"Thus, though the occurrence of extensive fields of drift over various parts of almost every country does throw some further difficulty over the researches of the agricultural geologist, and requires from him the applications of greater skill and caution before he pronounce with certainty in regard to the agricultural capabilities of any spot before he visit it—yet it neither contradicts the general deductions of the geologist nor the special conclusions he would be entitled to draw, in regard to the ability of any country, when rightly cultivated, to maintain in comfort a more or less numerous population. The political economist may still, by a survey of the geological map of a country, pronounce with some confidence to what degree the agricultural riches of that country might by industry and skill be brought, and which districts of an entire continent are fitted by nature to maintain the most abundant population. The intending emigrant may still, by the same means, say in what new land he is most likely to find a propitious soil on which to expend his labor, or such mineral resources as will best aid his agricultural pursuits; while a careful study of the geological map of his own country will still enable the skilful and adventurous farmer to determine in what counties he will meet with soils that are suited to that kind of practice with which he is most familiar—or which are likely best to reward him for the application of the newest and most improved methods of culture."

We regret that we are obliged to pass over the remainder of the Lectures with a passing notice of the Appendix. Among other matters this Appendix contains a series of suggestions for experiments in practical agriculture, followed by some very striking results obtained during the last summer in various parts of the island where these experiments were tried. They present an illustration of what theory may do directly for practice—an illustration which has been so far appreciated by the highest existing authority on such subjects—the Highland and Agricultural Society of Scotland—that they have offered a prize for such experiments during the present year, and have specially recommended these suggestions to the attention of intending competitors. But some later suggestions offered in the same Appendix—for experiments with guano and other manures—present an illustration of the money value of theory to the practical farmer, which many of our readers may be able more fully to comprehend, than any of the other values of theory to which we have had occasion to advert. In these suggestions, and in a paper on guano published in the Royal Agricultural Journal, our author had recommended to farmers, for reasons there stated, not to pay more than 20s. a cwt. for this new manure—though then selling at 25s. In consequence of this recommendation, the importers immediately reduced the price to 20s. But our author also recommended the trial of an artificial mixture, which he describes as containing all the ingredients of the natural guano—which was therefore likely to be equal in efficacy—and which could be prepared for 8s or 10s a cwt. and from the superabundant produce of our own manufactories. This mixture has already been manufactured for sale in various parts of the country; it has even been exported to our West India possessions—and in consequence again of this incipient opposition, the price of the guano has been further reduced to 15s. We do not pretend to guess what may be the ultimate value of either the natural or the artificial guano to the agriculture of the country, but theory, it is plain, cannot be of little importance to practical farming, when the simple publication of a theoretical suggestion by a single individual has had the effect of reducing the price of an esteemed manure as much as ten pounds a ton.

With the study of soils, the published portion of the Lectures terminates; in a third part the author proposes to treat of the improvement of the soil by mechanical and chemical means, under the latter of which heads he includes manures—and in a fourth, of the products of vegetation, the nature and qualities of the crops that are raised from the land, the feeding of stock, and the making of butter and cheese. When finished, this book will form the only complete treatise upon the whole subject to be found in any language.

In the latter half of the more elementary work (Elements of Agricultural Chemistry and Geology) an outline is given of the several subjects to be hereafter treated of more in detail in the Lectures—and we turn to it for the purpose of completing our own sketch, by drawing attention to two points which have particularly struck us in our perusal of the little work. The first refers to the greater richness of animal substances and excretions, as manures, than the vegetable substances on which animals live, and from which the excretions are formed—the second refers to the purposes served by the food, and to the organic and inorganic substances of which a nourishing food ought consequently to consist.

It is an opinion universally entertained among practical men, that, taking animal manures in general, any given weight of them is more valuable in promoting the growth of a crop, than an equal weight of the vegetable products on which the animal has been fed. This is true not only of animal ex-

cretions, but of the various parts of animal bodies also. This superior effect is in part explained by the fact, that they are all richer in nitrogen, and during their decay, therefore, give off a larger quantity of ammonia than an equal weight of any vegetable substance employed for food. But how does the animal matter acquire this richness? We inhale oxygen, but no nitrogen, from the atmosphere—how, then, is the vegetable matter changed in passing through the animal? What, in short, is the effect of the digestive process upon our vegetable food? The mystery is thus simply explained:

"Animals have two necessary vital functions to perform—to breathe and to digest. Both are of equal importance to the health and general welfare of the animal. The digester (the stomach) receives the food, melts it down, extracts from it what is best suited to its purposes, and conveys it into the blood. The breathers (the lungs) sift the blood thus mixed up with the newly digested food, combine oxygen with it, and extract carbon—which carbon, in the form of carbonic acid, they discharge by the mouth and nostrils into the air.

"Such is a general description of these two great processes—their effect upon the food that remains in the body and has to be rejected from it, is not difficult to perceive.

"Suppose an animal to be full-grown. Take a full-grown man. All that he eats as food is intended merely to renovate or replenish his system, to restore that which is daily removed from every part of his body by natural causes. In the full grown state, everything that enters the body must come out of the body in one form or another. The first part of the food that escapes is that portion of its carbon that passes off from the lungs during respiration. This portion varies in weight in different individuals—chiefly according to the quantity of exercise they take. From five to nine ounces a day is the average quantity, though in periods of violent exertion thirteen to fifteen ounces of carbon are breathed out in the form of carbonic acid.

"Suppose a man to eat a pound and a half of bread, and a pound of beef in twenty-four hours, and that he gives off by respiration eight ounces of carbon (3,500 grains) during the same time. Then he has

	Carbon.	Nitrogen.
Taken, in his food, about	4,500 grains, and	500 grains, while
He has given off in resp'at'n,	3,500 and	little or no nitrogen.
Leaving to be converted into food, or to be rej'ct'd,	1,000	500 grains.

"Our two conclusions, therefore, are clear. The vegetable food, by respiration, is freed from a large portion of its carbon, which is discharged into the air—nearly the whole of the nitrogen remaining behind.

"It is out of this residue, rich in nitrogen, that the several parts of animal bodies are built up. Hence the reason why they can be formed from food poor in nitrogen, and yet be themselves rich in the same element.

"It is this same residue also which, after it has performed its functions within the body, is discharged again in the form of solid and liquid excretions. Hence the greater richness in nitrogen—the greater fertilizing power of the dung of animals than of the food on which they live."—*Elements*, pp. 171, 172.

We here see how it is that the excretions of animals, and especially of full-grown animals, should be richer in nitrogen than the vegetables on which they are fed; and the same reasoning applies to the inorganic matter originally contained in the vegetable food. As a whole, the food is greatly diminished in weight during digestion, but nearly all the nitrogen and the whole of the inorganic matter still remain in it, therefore it must be proportionately more influential as a manure, in so far as its action depends upon either of these constituents.

Again, the study of the purposes served by the food of animals, while it shows what a truly nourishing vegetable food must contain, throws much light also on what must necessarily enter into the food of plants.

"Man and all domestic animals, may be supported, may even be fattened on vegetable food alone—vegetables, then, must contain all the substances which are necessary to build up the several parts of animal bodies, and to supply the waste attendant upon the performance of the necessary functions of animal life. Let us consider what these substances are, and in what quantities they must be supplied to the human body.

"1. *The food must supply carbon for respiration.*

"A man of sedentary habits, or whose occupation requires little bodily exertion, may respire about five ounces of carbon in twenty-four hours; one who takes moderate exercise, about eight ounces; and one who has to undergo violent bodily exertion, from twelve to fifteen ounces.

"If we take the mean quantity of eight ounces, then to supply this alone, a man must eat eighteen ounces of starch or sugar every day. If he take it in the form of wheaten bread, he will require 1¼ lbs. of bread, if in the form of potatoes, about 7¼ lbs. of raw potatoes, to supply the waste caused by his respiratory organs alone.

"When the habits are sedentary, five lbs. of potatoes may be sufficient, when violent and continued exercise is taken, twelve to fifteen lbs. may be too little. At the same time it must be observed, that where the supply is less, the quantity of carbonic acid given off will either be less also, or the deficiency will be supplied at the expense of the body itself. In either case the strength will be impaired, and fresh food will be required to recruit the exhausted frame.

"2. *The food must repair the daily waste of the muscular part of the body.*

"When the body is full-grown, a portion from every part of it is daily abstracted by natural processes, and rejected either in the perspiration or in the solid and fluid excretions. This portion must be supplied by the food, or the strength will diminish—the frame will gradually waste away."

Among the substances thus daily removed from the body, are portions of muscular fibre (fibrin,) of the clot of the blood, of gelatine, &c., all of which contain nitrogen, and must be replaced by the gluten of wheat flour, by the fibrin of lean meat, by the white of eggs, (albumen,) by the curd of cheese, (casein,) or by some similar substance in the food.

"The quantity of one or other of these removed from the body in twenty-four hours, either in the perspiration or in the excretions, amounts to about five ounces, containing 350 grains of nitrogen, and this waste at least must be made up by the gluten or fibrin of the food.

"In the 1¼ lbs. of wheaten bread we have supposed to be eaten to supply carbon for respiration, there will be contained also about three ounces of gluten. Let the other two ounces be made up in beef, of which half a pound contains two ounces of dry fibrin, and we have

	For respiration.		For waste of muscle, &c
1¼ lbs of bread yielding,	18 oz. starch	and	3 oz. gluten.
8 oz beef yielding,	. . .		2 oz. of fibrin.
Total consumed by respiration, and the ordinary waste,	18 oz. starch	and	5 oz. gluten or fibrin.

"If, again, the 7¼ lbs. of potatoes be eaten, then in these are contained about 2½ ounces of gluten or albumen, so that there remain 2½ ounces to be supplied by beef, eggs, milk, or cheese.

"The reader, therefore, will understand why a diet which will keep up the human strength is easiest compounded of a mixture of vegetable and animal food. It is not merely that such a mixture is more agreeable to the palate, or even that it is absolutely necessary,—for, as already observed, the strength may be fully maintained by vegetable food alone;—it is, because without animal food in one form or another, so large a bulk of vegetable food must be consumed in order to supply the requisite quantity of nitrogen in the form of gluten. Of ordinary wheaten bread alone, about three pounds daily must be eaten to supply the nitrogen, and there would be a considerable waste of carbon in the form of starch, by which the stomach would be overloaded, and which, not being worked up by respiration, would pass off in the excretions. The wants of the body would be equally supplied, and with more ease, by 1¼ lbs. of bread, and 4 ounces of cheese.

"Of rice, again, no less than four lbs. daily would be required to impart to the system the required proportion of gluten; and it is a familiar observation of those who have been in India, and other countries where rice is the usual food of the people, that the degree to which the natives distend, and apparently overload, their stomachs with this grain, is quite extraordinary.

"The stomachs and other digestive apparatus of our domestic animals are of larger dimensions, and they are able, therefore, to contain with ease as much vegetable food, of almost any wholesome variety, as will supply them with the quantity of nitrogen they may require. Yet every feeder of stock knows that the addition of a small portion of oilcake; a substance rich in nitrogen, will not only fatten an animal more speedily, but will also save a large bulk of other kinds of food."

Another purpose served by the food, in regard to which we have not space to quote the words of our author, is to supply the earthy and saline substances contained the solids and fluids of the body. Of the earthy matter in the bones, and of the saline matter in the blood and in other fluids, a portion is every day rejected, a new portion must therefore every day be introduced into the body with the food, or the animal pines away and dies. This brings us back again to what we have formerly stated, that the soil must contain these substances as essential constituents—since they are so essential to the vegetable tribes that these latter could not fulfil their great purpose in the economy of nature—that of feeding the animal race—if they did not contain them. This reasoning backwards from the wants of animals, had we no other arguments on the subject, were alone sufficient to explode the absurdities of the accidental or non-essential nature of the inorganic part of vegetables, and of the fertility of soils being mainly dependent upon their physical properties. In short, one leading chemical idea pervades the entire field of theoretical agriculture—explains almost every important step which is taken by the enlightened practical farmer—and points the way to those further, and we trust, large advances which the art of culture is yet destined to make, since the accelerated march of sound opinions is bringing under their influence a daily increasing number of the the most intelligent farmers of the country.

This diffusion of sound knowledge, we hope and trust, will be greatly aided and hastened by the works we have just considered. The Elements will open the way, and we think, by their easy style, are likely to prove interesting to the least instructed—the Lectures will be the resource of those who wish to obtain a thorough knowledge of the subject, and are not afraid to begin at the beginning of an octavo volume. We heartily recommend both to the attention of British agriculturists.

Literature and Science.

[For the Northern Light.]

THE CROSS OF HONOR.

[Translated from the French of Emily de Bonnechose.]

[Concluded from page 62.]

II.

The next day after breakfast, the notary resolved on his course. "That good Dulaurier," said he, "I have done wrong to leave him so long in ignorance of my good fortune. He will be vexed with me undoubtedly." The notary then went out, adorned with an immense ribbon. On his way he thought he observed several persons at a distance, who, through accident or design, took another direction as they saw him coming. "How now! what is the matter with them?" said Laforet to himself with surprise; "are they afraid to congratulate me?" He kept on, and seeing the captain's door ajar; "it is a good sign," thought he, "Dulaurier is at home, how delighted he will be, the dear fellow . . . . he is so good a friend." As he was going up the steps, he heard the voice of Dulaurier, who seemed greatly excited. The captain was then "tête-a-tête" with M. Benoit the collector of taxes and the best accountant in the place.

"A paper-scratcher, a quill-driver," cries Dulaurier, at the top of his lungs, punching the floor with the heel of his boot. "It is a shame! It is an outrage! If he was here, I should tell him plainly what I think of it."

"What the deuce is the matter with him?" asked the notary opening the door.

"Ah! is that you, Monsieur Laforet?" said the captain, growing red with passion. "By Jupiter, I am ashamed of you; and if it is a compliment you expect, you have come to the wrong place."

"Are we not old friends?" asked the notary, stupified with astonishment, "I thought . . . .

"Did you think," said the captain interrupting him, "that a soldier of the grand army would see, with composure, the cross of honor he wears disgraced? Yes, disgraced! that is the word. . . . . Your government has done a pretty thing. Are you not ashamed to go about decked out with your ribbon, making yourself a laughing stock to all the children in the country?"

"Captain!" said the notary, his blood mounting to his cheeks.

"Dare you," said Dulaurier, losing all command of himself, "to exhibit yourself to me —— to me, who have twenty scars—to me, who received the cross from the Emperor's own hand—to me, who—— They might have spared themselves the pain of raising his statue again at Paris, when they insult his memory in this way by throwing away the cross upon a pack of municipal officers, scriveners and counter-jumpers who have never smelt gun powder."

"Sir," said the notary, "I have smelt gun-powder and near by too, and you know it well; and as to this ribbon, M. Benoit can tell you that I have not usurped the right to wear it."

"Wear it alone then," said the captain; "I will

have nothing to do with it. I consider it dishonored, and I care no more for it than for my old shoe."

Dulaurier tore off his ribbon and stamped on it, foaming with rage. M. Benoit, the collector, endeavored to appease the two champions—addressing first one and then the other with words of peace. Still he did not wear the ribbon, and in spite of the friendship, which subsisted between him and the two Knights, we will not swear that he was greatly afflicted by their quarrel. It is pretended even that he took a malicious pleasure in it.

"As you please, Monsieur Dulaurier," said the notary, while the captain was still trampling his ribbon under foot: "wear your cross, or wear it not, esteem or despise it as you think proper: its value will be neither more nor less: but there is justice in Heaven, and I appeal to it—yes, I, who have devoted myself twenty years to the public—to determine whether I am not as deserving as you, who pass the livelong day in growing fat by doing nothing."

"What does he say, the pigeon-livered fellow?" asked Dulaurier, who scarcely believed his ears.

"Pigeon-livered, as much as you please," boldly answered Laforet," let me tell you that a man, who has filled ten offices without salary, and who, in case of emergency, exposes himself to the enemy without receiving a farthing, is full as deserving as another, who has never done more than one thing in his life, and who has been well paid for that."

Laforet went out, and it was well for him that he did, for in a moment more Dulaurier would have had him by the throat. He descended the steps rapidly with a thousand confused sounds in his ear. "The brute, the puppy," said he, as he went along; "who the deuce would have believed it?"

When he regained his composure a little, and was in a condition to see before him, he was near the door of M. Ambroise, the philosopher, whom he saw coming from a distance. "Here comes a wise man," said he, "he will be happy to learn that an honest man is sometimes remembered."

M. Ambroise entered before him, and he was not more than a step from the house when the notary saluted him.

"Ah! it is you, Monsieur Laforet," replied the philosopher, "pardon me, I did not see you. You have been ill for some days; but here you are, thank God, entirely recovered. I am very well too, Monsieur Laforet, and I make you my most sincere compliments."

Laforet, still agitated by his interview with the captain, heard only the last sentence, and answered with ardent gratification:

"I thank you for your compliment, Monsieur Ambroise: I was sure it would give you pleasure."

"Certainly, Monsieur, all feel an interest in your health."

"You are very good, Monsieur Ambroise, but we are not speaking of my health."

"Of what then, if you please?"

The notary, embarrassed, only answered this time by carrying his hand, with a slight smile, to his large ribbon, which the philosopher pretended not to see, though it was staring him in the eyes."

"Oh! it was the ribbon you meant. Excuse me, Monsieur, I understand nothing of those things."

"Who can tell," said the notary, with an air, which was intended to be knowing, "who can tell, Monsieur Ambroise, but you will wear it one of these days?"

"Oh!" answered the philosopher," I can have nothing to do with it, and I can speak to you as I think; for I know who I am speaking to, and you are, yourself, above such nonsense."

"What do you say?"

"Do you not remember that you have, on many occasions, set down these baubles at what they are worth—less than nothing?"

"Me! I have spoken lightly of the decoration?"

"Certainly, and our opinions were in accordance."

"What you say astonishes me, Monsieur Ambroise, I cannot conceive how it can be so. I can't recollect, for my life, that I ever spoke in that way"

"You imposed upon me then, in giving yourself up to me as a disciple in true philosophy. I believed, in good faith, that we understood each other. But you are now a great character; you must have distinguished friends. I am but a humble philosopher, and there is no probability that I shall ever reach such a dignity. I am not the one to make my court to either of the two classes of persons, who dispose of them. I know neither the clerks of the gentlemen, nor the chambermaids of the ladies of the court."

"Monsieur Ambroise," said the notary, touched to the quick, "I swear to you".....

"Stop, Monsieur Laforet, on your conscience now, have you not played the part of the flatterer and the beggar well? These matters are well understood; and here is a wonderfully fine thing, this cross of yours! Will your condition be improved by it? Upon my honor, Monsieur Laforet, I had a better opinion of you. But honors change manners .... and opinions also. You will excuse me .... a problem to solve, a serious labor, will deprive me of the honor of conversing with you any longer..... Your servant, Monsieur Laforet."

M. Ambroise entered his house and shut his door in a very irreverent manner in the face of the notary, who returned home, his head down, and his mind afloat on an ocean of painful reflections, and not knowing too well whether he was dreaming or awake. Within the last hour he had learnt more of the human heart than in his whole life before. He consoled himself, notwithstanding, the good man, in saying, and with truth, that honors excited envy, and that he could not expect to escape the common lot of him, who possessed them, whether knight or monarch.

In the mean time, what was our philosopher, the friend of true science and of virtue, the sovereign good, about. He had taken his pen, meditating on his problem, pursuing his important work, which consisted of a letter in the following words:

"MONSIEUR MINISTER,

"I take the liberty of reminding your Excellency of the claims, which I believed that I possessed to the decoration of the Legion of Honor, claims already set forth in various letters, and particularly in those of the 12th of June, the 4th of October, the 15th December and the 25th of April last. Allow me to repeat, my Lord, that I have consecrated to serious labors, by my devotion to science and philosophy, talents, which, if they had been employed in incendiary sheets and in frivolous works, would have been much more beneficial to my pecuniary interest. Since the last letter I had the honor to address to you, I have received, in both continents, new and flattering testimonials of the public esteem, having been appointed a member of the academies of Panama and Novogorod. This distinction is not the only one on which I can congratulate myself. I have taken the prize of philosophy in the institute of Dantzick, I have triumphantly demonstrated, by the objective and the subjective methods, that there are four categories, which united to the form of sensible intuition, furnish the forms and constituent principles of pure intelligence: whence it results, my Lord, that I have rendered immense service to the cause of metaphysicks. May I be permitted to add, that at a time when the star of merit is lavished upon so many individuals not of the liberal professions, the only mode of restoring all its lustre is to reserve it as a national and glorious recompense for those who devote themselves with disinterestedness to the cultivation of literature and science? There is no one, my Lord, who can more appropriately than yourself, commence this salutary reform. If the favour of your excellency should fall upon me, it should be the labor of my life to testify to you my devotion and gratitude.

I am, with the most profound respect,
my Lord, your Excellency's very
humble and very obedient servant,
AMBROISE,

Professor of literature and science, member of the Philosophico-Pedagogical Institute, of the General Historical Society of Kamschatka, of the Academies of Panama and Novogorod, and of many other learned societies and associations."

M. Ambroise read his letter over again attentively, and when he reached the protestations contained in the last line, he gnashed his teeth like a mad man, and said, crushing his pen in his hand; "my devotion! my gratitude! Depend on it, villain!—If I were to live a hundred years, I would never pardon you for preferring such fellows as Leblanc and Laforet to me! for forcing me to remind you a dozen times of my merit, and of dosing you with 'Your Excellency!' Ah! puppy! demon! I choke with vexation. Better, a hundred times, to live among savages than under such a government."

The letter of the friend of "the sovereign good" was not the only petition which left the little town that day for the residence of the minister. The cross of the notary had inflamed the ambition of every body: all brains were turned. It was surprising how suddenly his good actions departed from all memories. His unlucky ribbon was, as it were, a curtain drawn over each one of them. All the gossips of the neighborhood, who, the day before, would have sworn that he had no equal in the whole country, were now prating at his expense.

"Father Gigoux," said a fruiterer to her neighbour, a cobbler, "how is this about M. Laforet—how came he harnessed up in that fashion?"

"Ah! mother Leborque, he is a gentleman, you see, and such folks have fine acquaintances. That 's enough."

"It 's a crying shame, any how," replied the fruit-seller, with her hoarse voice; "there 's Nicholas, the watchman, who has seen the Emperor, and who made out to lose a limb with him: 'tis 'nt he that would have fished up that trinket with his wooden-leg."

"It is the veritable truth, mother Leborque; but Nicholas is not a gentleman. That 's enough."

The irritation was not less among the burghers and public functionaries. The mayor, who had served five years, sent his resignation to the prefect because he, the first magistrate of the place, was not knighted, while a member of the council had attained to that distinction. His deputy followed his example. The commander of the national guard, who had been a candidate for the honor six months, and founded his claim upon the fact there was not a single cross in his battalion, had forgotten, without doubt, that the notary was a member of the corps. He was tempted to imitate the mayor and his deputy, and he had in fact fiercely seized his pen. Yet, when he reflected that his post brought honor and consideration with it, without any expense of time or money, he changed his purpose, and magnanimously resolved to continue to serve. The justice of the peace set forth his twenty years of service, the watchman his wooden leg, and those who had nothing to found a claim upon were boiling over with rage, and were on the alert with all the others to humble the newly created knight on every occasion, as if his promotion was an insult to the merit of each of them. It was a general insurrection of irritated self-love; and there was, in every heart, an electric movement of hatred against those who conferred the distinction as well as him who received it. The minister had undoubtedly supposed he was acting wisely in recompensing an honorable, beloved and highly esteemed citizen, who merited the good wishes of every one: he had flattered himself that he should, in this way, encourage the devotion of the town to the government, and rally the discontented spirits; and this being his object, it must be confessed that he was not happy in the choice of means.

The vanity of the notary had already been subjected to rude assault, and his interview with his two friends gave him ample food for reflection. Still he was but imperfectly convinced of the vanity of human greatness. "My child," said he with an air of great satisfaction, the morning after this rude day's experience, "the grand chancellor has just written to me, and I am to take my oath of knighthood at the chief town of the *arrondissement* before the president of the tribunal, who is to be ready for me to-day. Get my coat ready, for time presses, and the coach will be off."

"If it be so, father, you cannot be at your post this evening. I have received your summons."

"No, it is altogether impossible, and it is the first time I shall be in default," added the notary, who had entirely forgotten the summons for the previous guard; "it is vexatious, but what can I do? Since the chancellor has written to me, I cannot hesitate. .... I must say a few words to the captain..... I shall just have time to write."

He wrote, then, to excuse himself, and he spoke, a strange subject for him, of the profound regret he felt in missing his guard that day. He spoke the truth nevertheless, the worthy and excellent man; his disappointment was sincere, for he would have appeared at the guard-house in all his glory, with his ribbon and his cross at the end of it, and the sentinel would have presented arms to him. He sent his letter and set off on his journey. He was yet but partially disenchanted. Still, experience being always worth something, he thought it wise to retrench somewhat of his ribbon, since it is dangerous to provoke envy.

Every thing passed off well, and precisely as he wished, at the chief town, and the next day the notary returned home, his heart lighter, his head more erect than the previous day. But, alas! the bad passions had not been slumbering in his absence, and Laforet found on his table a note from Captain Dulaurier.

The captain considered himself insulted by some hasty words, which escaped the notary in the height of his indignation, and he demanded that he should retract them or give him satisfaction.

On hearing this letter, which Laforet read aloud, Valentine burst into tears, and he had hardly finished reading it when M. Benoit entered.

"Monsieur Benoit," said the notary, "you were present; read that. Dulaurier demands satisfaction, while, on the contrary, it is I that".....

This unfinished sentence was far more eloquent than it would have been if another word had been added to it. M. Benoit read, and answered that a

simple retraction would be sufficent, and that a single word would settle the whole affair. Valentine strongly supported this advice. "Do it, dear father," said she, "for my sake do it."

Laforet, in the mean time, kept silence. He was certainly not of a warlike temperament, and he abhorred duelling in his threefold character of a Christian, a father of a family and a notary. Still he did not lack courage, and when his conscience spoke it was heard.

"No," said he, in a low but firm tone," I will not obey this insolent demand. God is my witness that it is I rather than this man, who had need of patience, and who have exercised it too. To retract would be to disgrace myself."

"My father," said Valentine, "in the name of heaven, forget" . . . . . .

"Monsieur Laforet," said the collector, "reflect, I conjure you."

"I have reflected, sir; this man wishes to make me do an act of meanness, that he may overpower me afterwards with his insolent contempt. I know what I owe myself, and you, my child; for what respectable man would marry the daughter of a father who was disgraced? I know too, what honor requires of me, and since I bear its insignia upon my heart, it shall be seen that it is not misplaced. Go, Monsieur Benoit, go, I pray you, find this man and tell him I had no intention of offending him. He shall not have another word from me, and if he seeks me, I shall be found."

The notary left the room and entered his study, while Valentine followed the collector, conjuring him, with tears in her eyes, to exert all his influence to reconcile this unhappy difference. M. Benoit desired nothing better. He had amused himself with the quarrel at first, not thinking it serious. He had the agreeable habit of passing his evenings, as a third party, with his two ancient friends, with whom he was alternately a partner at piquet and domino. A lasting rupture between them, a serious accident happening to either, would have seriously affected his personal enjoyment; and besides M. Benoit was at heart a kind man. He performed, therefore,to the best of his ability, his office as pacificator with the captain, who, when his anger had once exhaled, soon forgot what had caused it. M. Benoit proved himself a skilful diplomatist. He reminded Dulaurier very ingeniously that he was the notary's debtor, and that before fighting him he was bound to repay him. This was a wonderful argument, and the captain, considering moreover that a victory over Laforet would add little to his military reputation, declared himself satisfied.

The notary, in the mean time, considered it as a tragical matter. He concealed himself from his daughter, shut himself up in his closet and made a final arrangement of his affairs. He then wrote Valentine an affecting letter, which he designed to leave on his desk in case of an unfortunate issue of the affair, and as he was putting his seal on it, his eye fell upon his ribbon. "I pay dear for it," said he, drawing a long sigh; yet his heart quailed not. He was sad and agitated, but determined.

At the moment he was rejoining Valentine, M. Benoit returned in haste, announcing that the duel would not take place, and that he had made peace. But the malice of men is great, and the excellent notary was not at the end of his troubles.

The next day, while his head was still confused with the danger from which he had escaped, the bell was violently rung by a strong hand: it was a *gens d'arme*. The good Theresa, on seeing him through the grate, turned pale. She ran and opened the door, and returned completely terrified, bearing to her master a summons to appear in twenty-four hours before the council of discipline to answer to the charge of having missed two consecutive guards. "It is false, it is abominable," said the notary, starting from his seat, "they wish to destroy me and revenge themselves because I am knighted. This is the reason why I am pursued in this way. It is frightful. It is infamous!" Then raising his head, he added in the tone of one certain of his position. "I will confound their malice: by the law there must be a second offence before there can be a sentence, and I have never missed but one guard in my life; the warning of the day before yesterday is the first I have not answered. I have never received but one, have I Valentine?"

"There can be no great harm in it, father, but I fear they are right: the day before yesterday, while you were absent, I found another summons dated the 25th.

"It is not possible," said the notary, to whom this annunciation was like a thunder bolt.

Valentine showed him the summons, and the notary collecting his thoughts, became convinced that the news of his knighthood had caused a forgetfulness, of which he would not otherwise have been guilty. Still there was but one real infraction of discipline, his excuse for the second being unanswerable. The order of the chancellor was positive: he could not but obey it. Besides, having advised the captain, he was not delinquent. His enemies might enjoy the malicious satisfaction of dragging him before a court, but no one would dare to raise his voice to condemn him. Such were the considerations suggested by his own reflections. Such also were the views of his future son-in-law, young Didier, the lawyer, who had just become the heir of his uncle, but who doubted whether he was any the richer, considering the peculiarities of the deceased. Didier, called to the aid of the notary, laid aside the papers of his uncle without examination, and offered to Valentine's father his counsel and kind offices.

The whole town soon knew that M. Laforet, the notary, the man who, of all others, piqued himself upon the most scrupulous exactness in the performance of his duties—the only man who, perhaps, considered the national guard and the council of discipline as a serious matter, was about to appear before that tribunal. This, together with the profound sensation created by his recent knighthood, contributed not a little to excite a lively interest in this session of the court; and when, on the oppointed day, the notary appeared in the hall, accompanied by M. Benoit, the collector, and young Didier, it was filled to overflowing.

The president was the same commanding officer of the battalion who was on the point of sending in his resignation, considering the notary's cross as a reflection upon his own merit. Next him was seated captain Martin, whose pretentions were not inferior to those of his commander. The other members were, for the most pait, very inoffensive people, but who were quite willing to devolve upon others the solution of difficult questions, and who voted without reasoning.

The president opened the court, and the cause of the notary was first called. Laforet rose, advanced a few steps and faced the tribunal. Every one leaned forward to see him better. This general movement of curiosity did not escape the notary, and seeing himself thus set up for a show, the excellent man felt his honest forehead flushed, his firmness gave way, and yielding to a vague uneasiness, notwithstanding the consciousness of innocence, he cast upon his judges looks of embarrassment and doubt.

"You are accused," said the president with a severe tone, "of having missed two guards, one on the 25th and the other on the 27th. What have you to answer?"

Laforet had prepared a brief in conjunction with his future son-in-law; but being thus interrogated by the president, in the face of the audience, his ideas became confused, and he found that he could not recollect the first sentence of his speech. He faltered, and the president renewed his question with a still colder tone.

"Do you acknowledge having failed twice in the performance of your duty?"

"Yes, sir," replied the notary, "I have, I must confess, since it is the truth. But it was an unintentional omission on my part, and not negligence. I am well known, I do not hesitate, and it will be readily understood that nothing but an important event, an event unique in my life, could have caused me to forget one of the first duties of a citizen."

"And this event, sir,—what was it?"

The question thus put caused the accused a painful degree of embarrassment. At last looking first at his judges and then at his ribbon, which adorned his button-hole, he said, not without hesitating several times.

"At the very moment that I received the summons of the 25th, I was informed that his majesty deigned to recompense some services of mine by the cross of the legion of honor. I was, I confess, so excited, so carried away by this unexpected distinction, that I forgot every thing else . . . . and, I believe any other person in my place would have done as much. This is the reason why I lost my first guard."

This frank avowal produced a general whispering throughout the hall, and made the judges themselves smile.

"And the second guard," said the president, "the guard of the 27th?"

The notary answered this time with confidence.

"Be pleased to read this letter, which the grand chancellor did me the honor to write to me, and by which I was summoned to take my oath on the 27th before the president of the civil tribunal. It was my duty to obey the chancellor, and if I failed in my duty, it was greatly to my regret, I assure you. Besides, I was not in default, for I advised my captain, who is now present."

"Yes," said the captain with a sepulchral tone, "but you went off without permission."

At this unexpected answer the notary was silent, at length he rallied, and replied:

"I did not think I could fail to obey the injunction of the grand chancellor."

The president, who during six months service, had hardly burthened his memory with six words of command, all at once amended his error. He became touched with distinguished zeal for the general good, and he answered the accused by overwhelming him with his own maxims.

"Sir," said he, with merciless coolness, "the public service before any thing. The national guard, you know is a service of order and security. To miss a guard without permission, to be absent without knowing whether one's place is to be supplied, is to jeopard the safety of all. It is to render one's self responsible for the evils which may follow. It is a grave, a very grave delinquency."

This species of tactics was of all things in the world calculated to excite in the notary a mortal displeaure. It was taking his own weapons and dealing him a blow with them. It was touching him in as tender a point as a condemnation. It was convicting him of infidelity to his own doctrines. The blackness of such a proceeding wounded him to the heart, and his indignation lent him words.

"What is this," said he, with a voice full of emotion and an eloquent gesture. "Is this advice to be addressed to me by way of reproach. These principles of obedience, with which it is intended to break me down, are my own. I appeal to all who hear me for the truth of what I say. They are mine, I say; and while so many others have forgotten, I, gentlemen, have constantly honored them by my practice, and if I have erred, it is through ignorance, yes, gentlemen, it is through ignorance I have erred. I am very sorry, I must say—it grieves me to discover so much animosity to me. Whom have I wronged? To whom have I not ever been ready to render a service? For whom have I spared my time, my trouble or my money? Ah! gentlemen, rather take my life than to subject me to an arrest, for which I shall be inconsolable. Do not declare, by condemning me, that I have neglected my duty, that I have been unfaithful to my principles, that I have failed in zeal for the public good, that I have proved myself unworthy, after having received it as a recompense for my services, of this cross, the cause of my arraignment before you, and which has only been for me thus far a perpetual source of annoyance—a real crucifixion."

The notary sat down: a majority of the judges appeared greatly moved: the auditory was affected: the wife of the colour-bearer declared in a paroxysm of tenderness, that the good M. Laforet was as innocent as herself, and the drummer was seen to wipe away a tear. A witness of the sympathy he had excited, the notary thought himself half saved, and when he heard the prosecutor abandon the accusation, and eulogise his zeal and devotion, his joy may readily be imagined. For the moment he was out of pain. The sentence was not immediately pronounced, other causes of a similar nature were called on, and Laforet ventured to absent himself a few minutes, so anxious was he to announce to his daughter the favorable turn the thing had taken.

In the mean time the storm rumbled hoarsely behind him. Immediately after the determination of the prosecutor and the departure of the accused, murmurs began to be heard in the hall. Certain persons, whom we have already referred to, were displeased because the court were inclined to indulgence.

"A poor devil like one of us would smart for it," said one voice.

"No privilege for us!" answered another.

"M. Laforet will be acquitted, that he will," said a third.

"Oh! yes, that is plain enough," cried father Gigoux; "these animals don't prey upon each other, and M. Laforet is a gentleman."

These conversations between the two causes were not lost upon the president or the captain, who having their re-election at heart, thought it advisable to look to their popularity. Besides, it was not to be presumed that their jealousy would let so favorable an opportunity escape.

The notary was preparing to return to the court-room, when he saw M. Benoit coming out.

"What news?" said he while yet at a distance.

"The sentence is pronounced," replied M. Benoit with a sorrowful tone.

"I am acquitted."

"Condemned, my dear friend, unanimously, to two days' imprisonment!"

"Condemned!" repeated the notary, to whom the human race then appeared for the first time under its most sombre aspect. "Condemned!" said he again,

turning from his daughter to Didier, and from the latter to M. Benoit, with the most melancholy aspect. "No, I could never have imagined that the malignity of men would have carried them so far. Misfortunes of all kinds come upon me at once. My services are forgotton; I have lost my friends; my very life has been in peril; and now I am condemned, disbonored and led to prison like a criminal! Oh! Oh!"

The honest notary refused all consolation; he hid his face in his hands, and remained for some moments, as though he were insensible, in a state of the most lamentable desolation.

When, as evening approached, he went out at his usual hour, his button-hole exhibited but a modest and almost imperceptible ribbon. It had been gradually diminishing in length and breadth as the troubles of the worthy knight increased in number and intensity. It was a perpetual index of his sufferings. He had been cruelly exercised.

And yet the heaviest blow had not yet fallen upon him. Four days after his condemnation, Laforet entered his daughter's room with a newspaper in his hand; his breast was laboring, and his voice was choked by sobbing and rage. Valentine uttered an exclamation of affright!

"The villain!" said he at last; "the monster! he has destroyed me, he has murdered me!"

"Who, my father, who, in Heaven's name?"

"Dupré, the scoundrel, the bankrupt! He has run off, the wretch, he has ruined me! Your dowry is lost, stolen! Ah, this vile cross! cross of misfortune!" said Laforet, tearing from his button-hole the remnant of his ribbon. "Cursed be the day when I had the folly to run after this infernal ribbon! Your dowry! my Valentine, Your dowry! ah! good Heaven!"

Valentine comprehended his misfortune; but her father was so oppressed, so in despair, that she forgot herself in thinking of him.

"My father," said she, kissing his hands, "may God preserve you! It is all I ask. I will never quit you; I will live, I will work at your side, and for you. I will love and take care of you. I will be your's alone; and though poor, we will be .... You will be happy."

"Thanks, my child," said the notary, profoundly affected, "thanks for the tender affection, which for sixteen years has been my happiness. But it is not for you to expiate the faults of your father. I have madly gambled with your dowry; I have lost it, and you must have one, for Didier is not rich, notwithstanding the property he has inherited. I owe you another, my daughter, and it shall not be said that you are unhappy because I was guilty of an insane folly. My office is paid for; it belongs to me; I will sell it for you."

"My father," said Valentine, endeavoring to interupt him.

"Be silent," continued he, "be silent. I will sell my office, I tell you: it is worth a good price; for it has not become less valuable in my hands, I can safely say. I will labor myself; and if my successor wants an experienced, industrious and punctual chief clerk, I will claim the preference."

"Oh! do not talk thus," said Valentine sobbing, "you break my heart."

"I am not so broken down," resumed the honest man, "but that I can hold a pen fifteen years longer, nor so spoiled by good fortune as to consider it a dishonour to work in grey hairs. Honorable labor, my child, is the noblest decoration of man! Hereafter it shall be mine; and would to God I had never sought any other! My office shall be disposed of, and to-morrow it shall be known!"

This determination being fixed in the notary's mind, he hastened to his study to make the necessary arrangements. In the mean time Valentine had, on her part, formed a noble resolution. As soon as she was alone, she seized a pen, and wrote these lines to Didier, bathing her paper with her tears.

"An unforeseen calamity has destroyed our hopes. Seek not to shake my resolution: it is irrevocable! I can never be yours. I live henceforth for my father, for him alone. To him I devote myself forever. Adieu! dear friend, adieu!"

She sealed her letter and sent it forthwith to the young lawyer, whom the messenger met on his way. Valentine then went to rejoin her father.

"Renounce your purpose," said she; "it would make me too wretched. I have given up Didier .... our engagement is broken."

"What is this, my daughter?"

"I have written to him, and bid him an eternal adieu."

The door opened and Didier entered: he understood by the newspapers the meaning of Valentine's letter.

"Valentine," said the impetuous young man, rushing towards her; "I know all, I understand your letter, your generous resolution; but if I had to earn my bread by the sweat of my brow, like the poorest laborer, my life would be happy with you. I cannot live without you."

"There is nothing lost," replied the notary, "my office is for sale: it shall be Valentine's dowry."

"I will be the purchaser," replied Didier, smiling, "and I will restore it to you, Monsieur Laforet. I have just ascertained that my uncle's estate is much more considerable than I dared to believe. It is the dowry of Valentine, which Heaven restores to her."

And as he spoke he tenderly pressed the hand of the young girl in his own, and looked at her with a transport of joy.

"Embrace her, my friend, embrace her," said the notary overcome with emotion; "you are a noble youth. Good Heaven!" said he, wiping away a tear, "this is the first happiness I have known for six days."

The young man pressed his lips to the blushing cheek of Valentine, when old Theresa opened the door.

"I came to ask Monsieur's orders," said she, addressing the notary, "for Monsieur will recollect that there is to be a great entertainment at our house the day after to-morrow, and there is no time to be lost in making ready for it."

"How? what do you mean?" asked Laforet.

"Why! Monsieur has not forgotten that he has invited all the world to dinner the day after to-morrow to rejoice with him in his good fortune in obtaining the cross of the legion of honor."

"The devil take the cross!" said Laforet: "that is a matter well worthy attention, truly! We will put off the party a fortnight," said he, looking at the two young people with a mischievous air; "instead of a ridiculous entertainment for a ridiculous affair, we will have a wedding-feast; and this will be an exchange to some purpose."

* * * * * * *

Among those who read this story, if there is any one, who, taking the military condemnation of our hero to heart, wishes to know something further of him:

Take courage, gentle reader, the excellent notary had not the evil fortune to suffer this ignominy. The anniversary of the glorious three days arrived most opportunely to put him out of pain. An amnesty truly royal saved him from imprisonment.

And Captain Dulaurier, did he always remain in a passion? Was a reconciliation affected at last?

Yes, sir, and after a very short misunderstanding. The captain, one fine day, after having brushed his *moustache* and smoked his cigar, finding time hang heavily, and being at least as short of money as of ideas, felt his friendship revive at the very moment his last half crown disappeared. He determined to be magnanimous, and went directly and knocked at the door of the good notary, whose button-hole had now become modest, and no longer gave him offence.

And M. Ambroise?—Was there another quarrel?

Another peace; for the accommodation of differences belongs to the province of philosophy. The tenth petition of M. Ambroise having shared the fate of all the others, he published a violent manifesto against knighthood. He demonstrated how the illustrious order, for which the chamber of peers is at the present day smitten with so touching and exemplary a tenderness, is a veritable diabolical pest. He stigmatized the institution as the scourge of domestic comfort, as the never-dying worm of the soul, as the magical charm of the tempter to lead the world into evil. The worthy M. Laforet, his heart still bleeding with his innumerable wounds, admired the work from its title alone, and hastened to purchase it. The excellent man was in the book-store, looking over the book, in an extacy of enjoyment, saying amen to every thing it contained. He held it in one hand and his purse in the other when the author entered. Now, from the very beginning of the world, there is no such thing as an obstinate grudge in the heart of an author against a person, whom he has surprised under such circumstances—admiring and purchasing his book. Peace was accordingly made, and the reconciliation was peculiarly tender. We will merely add that the notary did not long enjoy the happiness of having regained his two friends: for the very next year, he sold his office in good earnest, and went to establish himself near his dear Valentine, at the chief town of the *arrondissement*, where we have lost sight of him. We are nevertheless authorized to believe that he lived happy in the enjoyment of his family, radically cured of the pursuit of honors.

Farewell ye gilded folies, pleasing troubles;
Farewell ye honored rags, ye glorious bubbles;
Fame's but a hollow echo, gold pure clay;
Honor the darling but of one short day.

Sir Henry Wotton.

[For the Northern Light.]

THE FALLING STAR.

BY E. G. SQUIER.

What art thou, brilliant star?
From whence, to where, wing'st thou thy silent flight?
Why shoot'st thou o'er the bosom of the night?
Why gleams thy ray afar?

Art thou a spirit, sent
From Heaven's empyrean to the slumb'ring earth,
Like that which lingered at a Saviour's birth,
High in the firmament?

Art thou a ruby bright,
Dropt from the ringlets of an angel's hair,
And falling through earth's crystal air,
With thy celestial light?

Art thou an arrow, hurled
By the dread monarch of the yawning grave,
In mercy sent, to free the writhing slave,
The stricken of the world?

Or is thy errand, now,
To still the throbbings of a monarch's heart—
To blight the joy of youth—the loved to part—
Or chill the laurel'd brow?

Perchance thou art a ray
From off the altar of the living God—
A burning radiance to our lowly sod,
To light the perfect way!

Perchance, thou fleeting one,
Thine is the gleaming of that holy fire,
Which bids the spirit to its home aspire,
Its earthly sojourn done.

* * * *

Whate'er thou art, thy ray,
Like Hope's fair star, o'er life's dark pathway streams,
Like that, alas! but for a moment gleams,
And ever dies away!

Bright star! the dreamy spell
That bound my soul, as thou did'st swiftly pass,
Like a sweet dream o'er Fancy's fairy glass,
Is broken now—farewell!

Albany, July, 1842.

[For the Northern Light.]

A NEW THEORY OF PLANETARY MOTION.

BY H. BARBER.

In offering to the public a new theory, in explanation of the motions of the planetary bodies of the solar system, the writer is aware of what he must encounter from the pertinacity with which mankind always cling to previous opinions and notions, which have long been taught and received as fundamental truths, with some of which they may suppose the principles advanced may come in conflict. But having for some time been impressed with the belief that his reflections and investigations had led to the discovery of some new principles in the motions of the solar system, which appear not to have been noticed by astronomers; and knowing no way whereby their truth may be tested so readily as by laying them before the public, and inviting the scientific to their investigation, he therefore adopts this course, trusting that however novel or startling it may appear for an individual to come forward at this time, with the annunciation of a discovery in this department of science, yet that it will not be wholly rejected, without first receiving a close investigation at the hands of the scientific, which the writer earnestly solicits.

It is said by astronomers that the motion of the planets in their orbits round the sun, is the result of two balanced forces, viz: the projectile and centripetal. The centripetal is ascribed to gravity, or the attractive influence of the sun, drawing them towards its centre, and the projectile or tangental force, causing the body to fly off at right angles from the line of attraction, thus causing them to move in a direction between the lines of the two forces, and to describe their respective orbits round the attractive body.

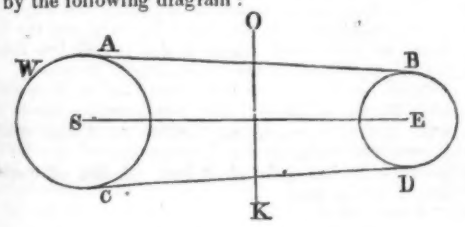
Newton clearly proved and established the doctrine of universal gravity as pervading the whole mechanism of the universe, and producing by its influence the centripetal motion. But to the inquiring mind the question arises, whence the origin and existence or continuation of the other force, known as the projectile, tangental and centrifugal force, all terms evidently applied by astronomers to the same exhibition, that is, the tendency of the planets to fly from the axis of motion.

In the explanations given by the different authors whose writings have fallen under my observation, they all represent it as an original existing force, which was operative before the centripetal force, and which, by a singular coincidence, was operative at right angles to the power of attraction; for had it been otherwise, and the projectile and centripetal forces had happened to coincide, the planet, instead of performing a revolution round the sun, must have been drawn directly to it. So of all the secondary planets—the original projectile forces must, by a

most singular coincidence, all have been at right angles to the power of gravity, else they would have formed a part of their respective primaries, instead of being, as they now are, attending satellites. And now the question returns, with renewed force—whence the origin of this projectile or centirfugal force? and it is not enough to be told that it was the original impulse imparted to them by their Creator, when first launched into existence; for no such force is found to pervade matter, as an inherent principle, where it comes under our immediate examination; and our knowledge of the uniformity of the general principles which govern matter, whether as the small dust of the balance, or those mighty orbs that wheel their course through the regions of space, lead to the conclusion that here is no exception to the lprincipe,—that the laws of creation are universal—neither is it left to blind chance; but that the whole is the result of a universal law, plain and simple when understood. We again approach the question, whence the origin of this force, which gives such uniformity to the motions of the planetary bodies, and causing them all to revolve round their primaries. And to properly understand it, it is necessary to look more closely at its manifestation, and see whether it is the cause of the planets revolving round their primaries, or only the effect resulting from that motion; for if it is the latter, then it could have no hand in producing that motion, in the first place, unless we substitute the effect for the cause.

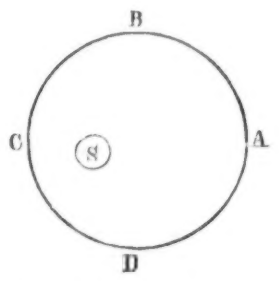
The earth, in its revolution round the sun, and on its axis, presents the exhibition of the centrifugal force under different circumstances, but resulting from a similar cause in both instances. By its rotation on its axis, it produces its centrifugal force at its maximum, at the equator, diminishing towards the poles. This is evidently the effect of matter moving rapidly in circular motion; for, as the first law of motion is rectilinear, when matter at the earth's surface (at the equator, for instance,) is made to move, by its rotation, in circular motion, it violates the first law of motion; hence, the tendency to obey that law causes it to exhibit what is here termed the centrifugal force, or the tendency to fly off from the axis of motion. In its orbit round the sun, we witness the same exhibition, that is, matter moving rapidly in circular motion; and hence, its tendency to obey the first law of motion, gives it its tendency to fly from the axis of motion, the sun; and this is termed its centrifugal force, which is evidently not the *cause* of the earth's moving in its orbit round the sun, but the *effect* resulting from that motion, it being in an orbit. Hence we see that the centrifugal or tangental force is produced, or caused to exist, by the earth's rapid motion in its orbit; therefore it does not exist until after the motion commences; consequently the idea of its being an original impulse, operating at right angles to the power of gravity, and causing the planet to move in an orbit, is erroneous, and should be rejected.

The next inquiry after rejecting the doctrine of original projectile forces, in giving to the planets their tendency to move in orbits round their primaries, is to account for that motion without the aid of any such force, which I now propose to do, and which, together with a rational explanation of the principles which cause these bodies to rotate on their axes, whilst they revolve round the sun, constitutes what I consider a new theory of planetary motion: and that is, simply, the power of attraction of gravity alone, modified by the *rotation* of the attractive body on its own axis. The rotation of the sun causes the lines of attraction upon one side, only, of the radius vector of that and the planet, to be active; consequently the planet is attracted, not towards the sun's center, but towards one side, and is made to follow the lines of attraction, and moves immediately in the first setting out, in a circular motion, violating thereby the first law of motion, which is rectilinear; and its tendency to obey that law produces its centrifugal force, which, from its effects, gives the elliptical form to its orbit. And from this operation of gravity we deduce the other and important principle in explanation of the rotation of the planetary bodies, whilst they revolve round their primaries; for, from the same cause, that is, the rotation of the attractive body, the lines of attraction being only active on one side of the attracted body, it is made to rotate upon its axis, which will be better understood by the following diagram:



Let S, in the above figure, represent the sun, E the earth, the line S E the radius vector joining their centres. Let A B and C D represent the extreme lines of gravity extending each way from the radius vector, equally, to the extreme surfaces of the bodies, with their spaces filled with lines indefinitely near each other. Now it is evident, the same amount of attraction being each side of the radius vector, if the sun was at rest, the earth being drawn towards it by the power of gravity, it would move directly towards the sun's centre; and if each side of the earth was attracted alike, it could not rotate on its axis. Now let O K represent a perpendicular line in the centre between these two bodies, then suppose the sun to commence a rotation on its axis in the course from A to W, and that part of the sun above the radius vector, will recede from the line O K, whilst that part below will approach it. The consequence will be, the lines of attraction above the radius vector are drawn tight, whilst those below it are slackened. The earth being so much smaller than the sun, the part below the radius vector does not recede from the line O K as fast as the parts of the sun approach it, therefore the earth's rotation on its axis cannot tighten the lines of attraction below the centre; and as the lines of attraction are exerted only on one side of the earth, it is made to rotate on its axis towards the sun, and as it is attracted towards one side of the sun only, it moves not in a direct line towards the sun's centre, but in a circle after the lines of attraction, as projected by the sun's rotation on its axis, which circular motion generates the centrifugal force, which, from its effects, gives the elliptical form to its orbit.

We are now prepared to explain the revolution of the planets—the earth, for instance—round the sun, without the aid of any original projectile force, and to show conclusively the origin of the centrifugal force.



Let A B C D, in the above figure, represent the earth's orbit, S, the sun in one of its foci; let the earth be, say, at its most distant part of its orbit, at A, the sun's attraction will cause it to move towards it, but, for reasons I have given, not in a direct line towards its centre, but in a circle after the line of attraction, as projected by the sun's rotation; and as it commences moving from A to B in a circle, the first law of motion is violated, and its tendency to obey that law, as soon as set in motion, causes it to recede from the axis of motion, which is called the centrifugal force. As the earth approaches the sun, its velocity increases, which produces an increased centrifugal force, which, by the time it arrives at its perihelion at C, overcomes the centripetal force, and causes it to recede from the sun, and moves past it from C to D, its motion gradually diminishing as it recedes from the power of attraction, until its diminished motion exhausts its centrifugal force, which, by the time it arrives at A, is so far expended that the centripetal force is again the strongest, and it again returns towards the sun, to run the same round again.

We can now rationally account for the two motions, which it is well understood the planets all have, in their orbits and on their axes, that is, they revolve and rotate from the same principle of gravity alone, influenced by the rotation of the attractive body on its own axis.

It is often said by astronomers, that if the centrifugal forces of the planets were suspended, they would all fall into the sun; but we now perceive no such consequence could ensue, neither could, by any fatality, such an occurrence happen, unless the sun should cease to rotate on its axis.

It may be urged against this theory, that no such effect upon gravity could be produced by the action of rotation of the sun, but that the power of attraction draws all bodies directly towards its centre. In reply, I would observe that such is not the actual condition of the planetary motion, that is, they do not move directly towards the sun's centre; and I think I have clearly shown that the centrifugal force is the effect resulting from their motion being circular. Consequently it had no agency in producing that circular motion in the first place; and as my theory fully shows it to be the result of gravity alone, and as no other force is known to exist, and as none other is necessary to explain their motions, then I think I am warranted in saying that such is the effect of rotation upon gravity. Newton deduced his theory of universal gravity from a comparison of the motion of the moon in its orbit, with that of falling bodies at the earth's surface, the force diminished according to Kepler's law. Now if the moon be operated upon by an original projectile force which prevents it from falling direct to the earth, then should the falling body at the earth's surface be subject to the same law or force, else the principle which applies to matter in motion would not be universal, and there would be an exception which would destroy the analogy which Newton found to exist.

The rational evidences in favor of this theory of planetary motion, are drawn from the fact, that all the planetary bodies belonging to our system, both primary and secondary, revolve and rotate in accordance with it; that is, the sun rotates on its axis from west to east, and all the planets revolve around him in the same direction, nearly in the same plane, coinciding nearly with his equator. They also rotate on their axis in the same direction from west to east, and their satellites revolve round them in the same order, nearly in a plane coinciding with their equators, with the exception of what is said of the problematical satellites of Uranus, which are said to have a motion round that planet retrograde to the order of all the rest, which, if so, shows that the only exception to this principle of planetary motion, is found on the remote confines of the system, where perhaps external causes are operative, that may never properly be comprehended. The universality of planetary motion in their orbits, plainly indicates a general principle that governs and sustains the whole; for the unerring certainty with which those mighty orbs wheel their courses through the regions of space from age to age, and from century to century, without the least variation, plainly shows the ceaseless energies of gravity; and as their rotation is as constant and undeviating, it clearly follows that it is the result of a cause no less ceaseless and unerring. And what principle has man ever been able to discover, that was adequate to the accomplishment of either of those effects, but gravity? And since, from the exposition now given of its operation, both those motions are rationally referred to that, and that alone, are we not justified in saying that to this all pervading, incomprehensible agent, we ascribe all the motions of the universe?

It may be asked, If this exposition be true, it is so simple, why has it not been discovered before? In reply I answer, that however much it might detract from the merit of the writer should his theory stand the test of investigation, yet he claims not to be the first who discovered the principles on which it is based, but only the credit for their application to explain the motions of the planets. For Newton, it seems, attached the same consequence to rotation of the attractive body upon that which was attracted, although he never applied the principle to the sun, to explain the revolution of the planets. "In a letter to Dr. Hook, in 1679, he proposed a direct experiment for verifying the motion of the earth, viz: by observing whether or not bodies that fall from considerable heights descend in a vertical direction. For, if the earth were at rest, the body would describe exactly a vertical line; whereas if it revolved round its axis, the falling body must deviate from the vertical line towards the east. The Royal Society, it appeared, attached great value to the idea thus casually suggested, and Dr. Hook was appointed to put it to the test of experiment. Hook replied to Newton, that wherever the direction of gravity was oblique to the axis of rotation, that is, in every part of the earth except the equator, falling bodies should approach to the equator; and the deviation from the vertical instead of being exactly to the east, as Newton maintained, should be to the south-east of the point from which the body began to move. Newton acknowledged that this conclusion was correct in theory; and Dr. Hook is said to have given an experimental demonstration of it before the Royal Society, in December, 1679."*

Here these two distinguished individuals discovered and demonstrated the main principle of my theory, yet neither of them appear to have applied it to the motion of the moon round the earth, although Newton had proved the motion of the moon was the same as that of the falling body at the earth's surface, the force diminished according to the ascertained laws of gravtiy; and Hook demonstrated that the direction of the falling body at the earth's surface, was the same as that of the moon in its orbit round the earth; yet it was for another purpose to which they applied the discovery, viz: to prove the

* Brewster's Life of Newton, page 143.

motion of the earth upon its axis ; and the more extended consequences appear not to have occurred to their minds.

Queensbury, June, 1842.

[For the Northern Light.]

GLEANINGS IN ITALY.

BY J. E. FREEMAN.

Near the Ponte Sesto, and nearer by the Porta Settimiane, there is a little Osteria, or eating-house where the poor Trasteverine may be seen as one passes, seated around rough tables and upon ruder benches, cheating poverty, for a brief moment, of some of its weight in a mezzo fogletto of common red wine; better known here, as vino nostrale. The locality of this beggarly looking suburban inn, is not made more inviting as a retreat, by the contrast it sustains to the grand palace of the prince Corsini, which is seen through the arch of the gate built by Septimius Severus a few rods beyond, and the Farnese palace, which rises upon the banks of the Tiber, enclosed with high walls, looking down with aristocratic contempt upon a small choked garden behind the Osteria. Two or three inner caves, as they appear, make the recesses to the principal *Salle a manger*, (which is also the kitchen,) where groupes, fond of less daylight, regale themselves, and destroy the effects of dampness by smoking and industrious gesticulation; an accompaniment without which, the tongue of an Italian of this class would seem made in vain.

Returning a few days since from a protracted walk in the country upon this side of the river, and having contracted under a meridian sun a reasonable share of fatigue, together with an excusable thirst for such an indulgence, the writer put into this harbor at hand, to repair damages by a little rest and a draught of vino nostrale, etc.

The inhabitants of this part of Rome are celebrated for faction and a preference for the west side of the Tiber, and also for a certain proneness to the free use of the knife in settling disputes or revenging jealousies; whereas the people of the other side of the yellow water use as weapons, ingeniously composed epithets of disrespect and malice. The Trasteverine boast descent direct from the ancient Romans, while they affect to look upon their neighbors as contaminated with barbarian blood. A lady authoress, who has made the most voluminous guide book in Christendom, tells an illustrative story about a German gentleman who wished to marry the daughter of a Trasteverine barber, and although rich, was unable to get the consent of the proud shaver, who, rather than marry his child to a barbarian, as he denominated the wealthy suitor, would have enacted the Virginius with his offspring.

The mean *Osteria e cucina* of which I speak, may have been but a few steps from the very spot where the unfortunate lover left his heart to be so barbarously treated: in truth there was such a shop just across the way, if I recollect aright. Several of the signorine of the vicinity, and for aught one might know, some one of the same exclusive family alluded to, were assembled at the way side tavern where your humble narrator was urging the cook to furnish him with a couple of as fresh eggs as venerable Trastevere could muster. The cook, the most important personage in this establishment, had a cook's best recommendation to a *bonvivant*—health and a person gratefully acknowledging its maintenance in a rotundity worthy of the host of an English ale house. His head was certainly not unlike the head of Augustus Cæsar, his countryman, and had his white cap and apron given place to helmet, cuirass and the other steel armor, he would have presented no bad model for a Roman soldier, (such as one sees in the bas reliefs of the arch of Constantine,) with the exception, be it said, of the somewhat unclassic lines the mail might take in its lower part. *Eccomi*, said he, as he placed upon the dubiously clean plank the eggs swimming in hot oil ; and placing one hand upon his thigh a la Vandyke, while the other held a large cooking fork, head raised and eyes right, he demanded if he had not the honor to serve a foreigner. Informed that his guest was from the other world, called (how unjustly!!) America, he opened his ox eyes wide, elevated the small pitchfork which he held, pointed majestically towards the east, exclaiming. "Oh, daverro; li accanto del Egitto!!" There by the side of Egypt: at the same moment gazing as if he would discover some resemblance between myself and the mummies at the Vatican, if not to the porphyry crocodiles and the sublime sphynx. The plate of eggs disappeared in the interval, and his hard compliment was drowned in a good finishing draught of his red wine. In the short space of fifteen minutes he found time to cook three commissions in the soup line and to relate some of the striking passages in his most stirring life ; the most dramatic of which was where he had, to use his own words, spitted a Roman in a quarrel. The Roman died, and Gaetano was incarcerated near the Tarpeian rock. The tribunal before which he was arraigned, pursued he, would have had the wickedness to condemn me to five years labor in the galleys, but that the few scudi, [dollars,] I possessed bought me off. In this part of his narrative, St. Gaetano, as he was familliarly called, paused to make some pepperish remarks touching the injustice of the laws, and of modern Roman law-givers—the rascality of making an honest cook and brave man pay for slaying a Roman *bierbone* in fair fight with knives. He was becoming eloquent, his white night cap pushed back from his forehead, his apron or coarse napkin thrown over his left arm, while his right, with the sleeve rolled up upon the burnt flesh, raised itself to the graceful point deemed best for line in sculpture. The deep color of the skin was not, to be sure, in strict harmony with classic composition—nor perhaps the somewhat greasy pantaloons, nor could one even except a strong breath of garlic, upon which he wafted forth the musical language of his land. At this climax of his indignation, digression and oratorical grace, the door was darkened by three strolling musicians. One with a violin and the other two with rude looking harps. Striking up one of the lively Neapolitan airs, off started upon the broken stone floor two females chasing each other in the dance of the tarantella from the fire place to the tables—away went cook himself, cutting in between the youngest and her fat partner of forty, and for five good minutes sustained a heat, that none but one of his hot profession might have endured. In his turn he was cut out by a handsome youth, with his jacket a la Romana thrown over his left shoulder, and the fat, fair-and-forty had also to give place to a young Trasteverina belle, who, holding up the two sides of her apron gracefully and as seen no where else, artfully kept up retreat and chase, evasion, cheat and some other fascinating movements in a manner to call forth much applause. These were succeeded by other invaders, until all had had a turn from youngest to oldest. The musicians drank the proffered wine, pocketed a few coppers and departed to carry inspiration to other feet, to dance at another Osteria.

The Vestris of the ballet seemed to belong to the household, and had brought her beauty into such fair notice in the dance, that some praise I deemed but a just compliment, however dangerous it might be among the jealous Trasteverine, and as St. Gaetano looked the least dangerous rival, (although he had spitted a Roman,) I communicated my eulogy to his safe keeping. Gaetano repaid the confidence with an explanation which led to the chief point in this trifling sketch. She is, said he, the only daughter of the baker, who owns the bakery attached to the osteria. We call her la Fornarina, and leading me to the out side of the door, pointed to a window over head ornamented with a pretty arch. There, continued he, was the chamber of the Fornarina, the beautiful friend of Raphael d'Urbino, the divine painter. The government prohibits our disturbing or in any way changing that window or that apartment. I will show you the room and the garden, added he, and the remains of the steps by which the painter descended from the high wall as he came from the Farnesina palace. We were within a minute dodging through the labyrinth of a curious bread manufactory. The little garden was explored, the place where Raphael stole down to his secret interviews located—the back window, and how, (according to Gaetano, my only authority upon this point,) he climbed up to it. The next thing was to ascend by a perilous pair of stairs up into the second and last story, where we entered the chamber and where we frightened some half-dozen doves kept there. In one corner we discovered a nest, from which St. Gaetano, regardless of sentiment, and of bringing sorrow to the innocent cocers, and of association, snatched away the pearly little treasures. Shame upon thee, St. Gaetano—would roast them for thy dinner?!!

In consulting the life of Raphael by Quatremére di Quincy, compiled from a great number of his letters and notices, both cotemporaneous with his day and since, the tradition about this spot is well sustained. Melchior Messirini writes of the garden and its contiguity to the palace Farnese, that the baker's fair daughter was in the habit of sporting herself there, as she supposed, unobserved. When seen by Raphael for the first time, she sat bathing her feet in the Tiber, which, at that day, kissed the embrasure of that giardinetto. This event must have occurred between 1514 and '15, at which period the great painter was under an engagement to marry a niece of Cardinal Bibbiena, to which his heart was very likely not a party, but one which he would have fulfilled to gratify relations and friends, and particularly Cardinal Bembo, then one of the most distinguished men of letters at the court, and Raphael's admirer and fast friend. This engagement appears to have been made with a condition for three years reflection before taking the irrevocable step. The three years passed, he found excuse to still prolong the time, in the mean while the young lady died, and was buried in the Pantheon in the chapel erected and belonging to Raphael, where shortly after his own remains were deposited. The inscription upon the stone sacred to Maria Bibbiena, calls her "sponsae ejus"—affianced; but that she died "ante-nuptials facese"—before her marriage.

Among some of the reasons given for Raphael's desire to put off his marriage is, that he had a prospect of being made a Cardinal, with which Leo had flattered him, but as Constone happily observes: Sperava d'essere Cardinale di santa chiesa, ed invece fu pontifice ottimo massimo nella pittura—or, he hoped to be Cardinal in the holy church, but instead was Pontiff highest and greatest in his art.

That La Fornirina lives in many of his pictures is indisputable: in the Illedoris and in the Transfiguration and several besides, she is recognised. She was gifted with a delicate sense of grace and expression, in harmony with the purity and refinement of the immortal Urbinato himself. She was ever near when employed on his latest works, and it is said his infatuation made it necessary to their conclusion. The pope had at one time disapproved of this alliance, but was reconciled to it, looking upon the Fornarina as the artist's invaluable model.

Various are the accounts of Raphael's death. The most accredited however is, that being engaged upon those extraordinary frescoes in the Farnesina, he was sent for by Leo, who wished to consult him about advancing the church of St. Peters, of which he was then architect. Hastening to the Vatican under a hot sun he over heated himself, and during the conference in the cold hall, was attacked with a sudden chill. Leaving the presence of his sovereign and patron, he went to his own house, and shortly after, was seized with an acute fever—sent for his physician, who bled him profusely and precipitated his always delicate system to a feebleness from which it was unable to rally. A few days of suffering, and that wonderful spirit which had shed enduring lustre upon his name and country, and made art indeed glorious, had gone, and left Rome to shed its tears over the lifeless clay, beautiful even without a soul, which lay in state with his last noble picture, the Transfiguration, upon the easel, in the same apartment. Quatremère, in his voluminous life of him, speaking of his death remarks: "La verra pompa del sua funerale fu, il corteggio immenso di amici, di scolari, di artifici, di scritori celebri, di personaggi di ogni ordine che lo accompagnarrono in mezzo al compianto de tutta la citta. Giacchè fu quitto un dolore generale al quale participo la corte stessa del papa, il quale dicesi, spargesso lagrime su quella morte. Nessuno veramente andava a fare una perdita magiore; ca era piu atto de lui ad apprezzarne a consequenza poiche nessuno connobbi meglio di Leone X il prizzo della gloria che il Genio delli arti spargi sopra il regno dei principi." Or translated. The true pomp of his funeral was, the crowd of friends, of scholars, of artists, of celebrated writers and of persons of every order and caste, who followed his remains in the midst of the regrets of the whole city, since the lament pervaded the entire population, in which participated the court of the pope itself. Leo himself is said to have shed tears over the dead body. No one truly had more reason to weep his loss, and it was apt of him to rue the consequences, as no one knew or might know better than Leo X, the price of glory which genius in the arts, sheds over the reign of princes.

In the most beautiful remaining fabric of antiquity at Rome, repose his ashes. Carlo Marrati, who flourished about fifty years after him, and who imitated him as far as his power extended, is the only artist companion he has in death, whose tomb is seen also in the Pantheon near his great model. The intention was once, I believe, to make this rotunda the depository of all the illustrious who should die at Rome, of whatever religion, as much for its Pagan history and use, as for the little account to which the government could otherwise turn it. Since, however, the plan has been defeated. It has been purged from its ancient pollution and baptised by the name of Santa Maria del Rotunda, and the few busts of great men which grace the niches made for the gods, sent to the Campadoglio Museum.

Little is known of the history of la Fornarina after Raphael's death. She was provided for in his will, and it is presumed fulfilled the desire which is seen written in his hand under one of the lovely portraits he has painted of her. Retira ed onesta, sono i miei priegi.

Rome, 1842.

[For the Northern Light.]

SCIENTIFIC NOTICES.

BY T. R. BECK.

VILLEMAIN, the minister of public instruction, has applied to the French Chamber of Deputies for a grant of money to be applied to the re-printing of the great works of La Place, copies of which have become very rare, while the works themselves belong to that high class of science, which makes purchases of them too limited to induce private speculators to adventure on their republication. The widow of La Place surrenders her copyrights to the state; and the Minister requires 40,000 francs for 1,000 copies of seven quarto volumes, a portion of which he proposes to give to the public libraries and libraries of the scientific institutions throughout the kingdom, a few to be placed at the disposal of the Institute, one to be given to Madame La Place and the remainder to be sold.

MINIATURES ON MARBLE.

Thin polished plates of white marble are now strongly recommended by several French artists, as a substitute for ivory, in miniature painting. The slices of marble are cemented down upon a sheet of paste-board, to prevent danger of fracture; they are said to take the color with great freedom and to hold it with tenacity, and it is obvious, that they are incapable of any change to time, or the effects of heat or damp. Ivory, it is well known, becomes yellow, and in hot climates, often splits or warps. It can only be obtained also of a very limited size, whereas, those plates of the finest grained statuary marble can be obtained of any size. Plates of about twelve inches by ten inches are prepared only about three-sixteenths of an inch thick, and smaller ones thinner in proportion.

DELBRUCK'S NEW PROCESS OF SOLDERING.

At a meeting of the London Society of Arts, held April 6, this process was exhibited, illustrated by specimens of the old and new method, and a portable apparatus was used, to show the ease and rapidity of the operation. The process consists in uniting the parts to be joined by fusion of the metal at the points or lines of junction, so that the pieces when joined form one homogeneous mass, no part of which can be distinguished from the rest, even by chemical analysis. This is accomplished by substituting hydrogen gas for fire, and a blow-pipe instead of the plumber's iron. The superior neatness and durability of the joints, and the absence of solder were said to be of great importance in the construction of boilers, for making acids, and for the concentration of saline solutions. Another application of the gas is that of heating soldered bits for tinmen, zinc-workers, and others. A few seconds suffice to bring the iron thus heated to the desired temperature, and the workman can increase or diminish the heat at will, and is never obliged to change his iron or suspend his work.

INLAID MARBLES.

A beautiful mode of ornamenting marbles has recently been brought into use in Paris. It consists in etching, by acids, deeply into the marble various designs upon a properly prepared bituminous ground. When the corrosion has gone sufficiently deep, the cavities are filled up with hard colored wax, prepared as to take a polish equal to that of the marble when cleaned off. Drawings thus made on black marble, and filled in with scarlet wax, after the manner of Etruscan and certain Egyptian designs, are said to have a very noble effect, and are applied to tables, panelling, stoves, &c.

At a meeting of the French Academy of Science, held March 14, 1842, a communication was announced on the warmth imparted to the earth by a covering of snow, and respecting which there had hitherto been much scepticism. M. Arago stated that M. Boussingault had ascertained the truth of the theory beyond the possibility of doubt during the past winter. He found that a thermometer plunged in snow to the depth of a decimetre (about four inches) sometimes marked as much as nine degrees of heat greater than that at the surface.

ELOQUENCE OF BRIDAINE.

(*From Abbe Maury's Principles of Eloquence.*)

"Many persons still remember his sermon on Eternity, and the terror which he diffused throughout the congregation. Whilst blending, as was usual with him, quaint comparisons with sublime transports, he exclaimed. 'What foundation, my brethren, have you for supposing your dying day at such a distance? Is it your youth? Yes, (you answer,) I am as yet but twenty, but thirty! Sirs, it is not you who are twenty, or thirty years old, it is death which has advanced twenty or thirty years towards you. Observe, eternity approaches. Do you know what this eternity is? It is a pendulum whose vibration says continually—always—ever—ever—always—always! In the meanwhile, a reprobate cries out, 'What o'clock is it?' And the same voice answers, 'Eternity.'"

ROTTECK'S GENERAL HISTORY OF THE WORLD.

A work under the above title has recently been republished in this country. We do not know who is the printer and proprietor, we have not examined the American copy, and therefore cannot be charged with any personal feelings, but we find the following remarks in an English literary work, which we deem it our duty to extract.

"It is the duty of an historian, to state no opinions but such as are deducible from the facts he records—mythology and its explanations are out of his province, but Rotteck belonging to that school which regards the Mosaic records, as nothing more than a Hebrew mythology, goes out of his way to explode the miracles of the Pentateuch, and shows that they are little better than figments."

The following is a quotation from Rotteck:

"In those miracles, however, which Moses narrates as experienced and effected by himself, we can often discern a real fact very distinctly, upon which the narrative is founded, which easily took the form of a miracle; sometimes by its peculiar nature, sometimes by the enthusiasm of those upon whom it operated, and perhaps, also, by a sage policy of the narrator, which was adapted to the time."

"On his own showing, (says the Reviewer,) this is a wanton attack; the Mosaic records, save in the account of the Creation and the Deluge, do not belong to general history—they relate a special dispensation to a peculiar people—and moreover to a people whose system of policy was chiefly directed to keep them separate from surrounding nations. Far be it from us to deny the right of a critic to investigate the nature of the miraculous transactions recorded in the Bible, but criticism is not history, and the mixture of the two in this volume renders both wearisome."—*Athenæum, April* 2, 1842.

[For the Northern Light.]

LABOR.

BY P. H. AGAN.

LABOR is enjoined upon mankind by the scriptures of divine truth. And not only do the scriptures command us to labor, but the organization of the human system is of such a nature, as to require a compliance with this command. It is one of the organic laws, and cannot be evaded, except at the sacrifice of all the comforts and enjoyments of life.

If, then, this law is imperative upon mankind, it is evident that they should regard its injunctions in a greater degree than they do. But we see that civilized nations, generally, pay more attention to it than those which are not; and for the obvious reason, that they perceive the consequences of its infringement. They reason from cause to effect. The enlightened man naturally reasons with a greater force than the unenlightened, and would be very certain to pursue a course calculated to redound to his happiness, while the ignorant, in reasoning upon the same subject, would be very likely to arrive at a different conclusion, and consequently pursue an opposite course, though in quest of the same object as the other.

Happiness is sought for by all mankind. It is an innate desire implanted in the human breast by the Creator himself. It governs the actions of man in all the varied and changing scenes of life. It is the shrine at which his daily oblations are offered up. It is a fountain, at which all are continually striving to drink. Yet how few comparatively attain it. Look abroad among mankind and see them engaged in their various occupations. One is engaged in manufacturing; another in the uncertain occupation of commerce; another in merchandize; another in the demoralizing business of stock speculations; and another in the more safe and sure occupation of tilling the soil; and each in pursuit of the same object: that is, to amass wealth; happiness, according to their belief, being measured by the amount of gold which they may succeed in accumulating. But all will admit that it is important and necessary to a civilized people, that these different kinds of business should be pursued, not for the purpose of amassing wealth, for all the wealth of the world could not bring to the possessor any enjoyment. But we see that this is the governing principle. In its pursuit, man will sacrifice his health, his independence, his integrity; nay, sell his birth-right to obtain the "thirty pieces of silver." A small share of the wealth of the world, is the portion of every man who is frugal and industrious; and may be the means, when properly used, of contributing to his enjoyment. He may with it educate his children, and fit them to become useful citizens; and in various ways, contribute to the happiness of those around him. But really and truly happiness consists in obeying nature's laws; that primitive code established contemporaneously with man himself; and as it was established for his government, it is plain that he cannot be happy in disobeying any part of its injunctions. No excuse can be offered for the neglect of the natural laws, for by their operation they are made plain to the understanding, and instil their principles into the mind of every intelligent man. Any person readily perceives, that if he remains idle, that he thereby brings a punishment upon himself—that he is denied the bread which he would receive from the efforts of labor. So it is in regard to the violation of other laws, physical and moral. The transgressor in the act of transgressing, receives the punishment.

Who, amongst the different classes of mankind, enjoy happiness in a greater degree than the farmer? None; and for the reason that he pursues his avocation daily and systematically. His habits of life are necessarily regular, and consequently he is blessed with health and long life. But we may observe that there are to be found individuals in every class and profession, who enjoy the same great boon as the farmer; but they are those who like him, labor, or more properly speaking, exercise their physical organs sufficiently to conform to the primitive law.

It is not only necessary to the happiness of man, that he should labor, but his existence demands it. He should not, like the operatives in the English factories, toil sixteen hours a day; for by such a course he would interfere with a wise provision of nature, and bring innumerable evils upon himself; neither should he, like the peasantry of Spain, or the lazaroni of Italy, work enough to obtain a bare subsistence, for worse effects would follow. The wisdom of Providence has set bounds to his laws, beyond which mankind cannot pass with impunity. His laws are as unchangeable as the law of gravitation, and as immutable as himself. The amount of labor which a man can perform, necessarily depends upon the strength of his physical powers. The labor which is required of him, is no more than he can easily perform. Dr. Franklin estimated, that were all mankind to labor for four hours each day, it would be sufficient to provide for their comfortable maintenance, and the balance of the time, he well said, might be profitably expended in the improvement of their minds.

It may be said, that a person can exercise his physical powers sufficiently without labor, to enable him to enjoy a good state of health. This may be true; but such a course would not bring with it the advantages which would be derived from the same length of time expended in labor. Mankind are placed upon the earth, and left to take care of themselves. They are compelled to "sow the seed and reap the harvest;" and in this manner are they enabled to supply their daily wants and desires, and in the act of doing this, they contribute to their own happiness.

If the mass of mankind ever arrive at the exalted station, which Providence has plainly intended they should, it must be by industry. This course is plainly marked out by the Creator, and enforced by the words of eternal truth. We see the happy effects of industry in the history and condition of nations, as well as individuals. We see in every community, the stations accorded to the idle and the industrious man. The former is not regarded with any degree of respect, while the latter is looked upon as a valuable citizen, and accordingly takes his proper place in society. No man ever become truly great, or a benefactor of his race, unless he first improved his mind by constant and laborious exertion. And this he is bound to do. He is imperatively called upon, whatever may be his station or condition in life, to be industrious and persevering to the end, that he may fulfil the great object of his being.

Mankind in every age of the world, have endeavored to do away with the necessity of adhering to this command; but all their efforts have proved fruitless and unavailing. The stern primeval sentence has gone forth "to the ends of the earth," speaking to all mankind, and telling them in terms not to be misunderstood nor disregarded, "Thou shalt get thy living by the sweat of thy brow."

Liverpool, June, 1842.

Passions are likened best to floods and streames;
The shallow murmur, but the deepe are dumb.
So, when affection yield discourse, it seems
The bottom is but shallow whence they come.

Raleigh.

[For the Northern Light.]

ON THE INFLUENCE OF PRIVATE EXTRAVAGANCE UPON PUBLIC LIBERTY.

It is thought by many that private extravagance has an unfavorable influence upon public liberty—that it tends to its destruction. It is said, that private extravagance, and the luxury connected with it, have not unfrequently aided in the loss of liberty and happiness in states in which they prevailed.

The examination of the position is interesting to man and important to governments. A very brief enquiry into it is here proposed.

In the first place then, what is the immediate effect of private extravagance. Is it not the transfer to many, of what was before the property of one? Is this an evil? But it may be said, how much better would it be if, instead of luxurious living, our means were employed in improving the fertility of the soil, in increasing the facilities of communication and in the construction of useful buildings. This no one will deny; yet the application of property must from its very nature, be left entirely free to the possessor, and it is his right to expend it in magnificent dwellings, costly furniture, brilliant equipages, rich dress and splendid entertainments. He may thus lavish a property which has been amassed by himself, or transmitted to him by some great land-holder or some rich merchant; but does he injure the community or endanger its liberty by such extravagance? It is thought by many that the more property is divided in the natural course of things, the better it is for the happiness of man, and the safer is his liberty: that the more property is diffused thoughout the community, the more persons there are who have an interest in its preservation, and the more there are who are enabled to procure the information necessary to an intelligent exercise of their rights.

History has been called upon for proof of the evil influences of the lavish expenditures of individuals upon the happiness and liberty of a community. The Italian republics of the middle ages, it is said, lost their liberties in this way; but what was the liberty of the Italian republics? it was not the liberty of the people generally: it was the liberty of the nobles—that is their freedom from monarchical power: the people were nothing: the nobles every thing. In such a government, it was important to prevent extravagance and luxury, because they could be indulged in only by the nobles; and if indulged in, they diminished their property, and thus undermined the government, to which it was essential that the nobles should have all the property of the state. Accordingly we find in these republics, sumptuary laws forbidding all kinds of extravagance: and considering the nature of the government, the wisdom of such laws is apparent. They preserved the property of the nobility, on which depended the safety of the state, and by requiring simplicity of dress and equipage and modes of living, those contrasts were avoided that were likely to produce discontent. In aristocracies therefore, it must be admitted that lavish expenditures are bad, so far as they relate to the nobles and that form of government which is calculated for them alone; but it does not follow that they have the same bad influence on other forms of goverment.

In monarchies this matter has been viewed very differently. The policy of breaking up the power of the nobles, when it was found to interfere with the prerogative of the crown by enabling them to sell their landed property, and of course to spend what they received for it, has long been practised by kings and statesmen. The English monarchs, at a very early period opened the way to the nobles to sell their landed property by laws abolishing the restraints imposed by the feudal system upon alienation, and in proportion as the nobles expended the money obtained for the sale of their lands in articles of luxury furnished by commerce and labor, the condition of the people improved. And here perhaps, may be found the beginnings of English freedom, rather than in Magna Charta itself, which was little else than a charter, maintaining and establishing the claims of the nobles, against the perogatives of the crown. In France, Richelieu broke up the power of the nobles, by every possible means, because they were in the Monarch's way, not certainly for the good of the people; but yet the improvement of their condition was the consequence. So in Prussia, in our own time, the nobility have been enabled by law to sell their estates, which they never before had been allowed to do, and although the diminution of the powers of the nobility might have been the only thing intended, yet the result will probably be beneficial to the people. At this very moment the Russian Autocrat is endeavoring to break up the great estates of the nobility, whose power has been fatal on several occasions to his family.

In all these movements of monarchs, the motive no doubt, for enabling the nobility to alienate their estates was, to give the monarch a greater control of them, and probably without much regard to the increase of the property or happiness of the people; and yet the result of the alienation of the great landed estates always has been and always must be favorable to the general interests of a community. In England indeed it was found necessary in order to carry out the measures of the crown for the control of the nobility, to have the aid of the people, and to give them a share in the government, as it was supposed they could be more easily managed than the nobles.

Now is it not clear that it was well understood that if the nobles had the power of alienating their estates, that they would frequently do so: that having the means of extravagance and expenditure, they would be tempted to use them, and thus their power of opposing the monarch be diminished. But results have followed and must follow that were not intended, and while the power of the nobility diminishes by luxurious living, the comforts and the property and the influence of the people increasing as they furnish by their labors the costly articles which the great land-holders require.

It seems then that private extravagance and luxury have a direct tendency to break up great estates, and that therefore they are unfavorable to an aristocracy. That they have the same tendency in monarchies, and have therefore been encouraged by monarchs when the object was to diminish the power of the nobility, and that even after that object was accomplished they were not discouraged, because although they still constantly tended to the breaking up of great estates, and consequently to the diffusion of property and influence among the people, yet the danger resulting to that kind of government was considered so remote, as not to alarm those in power. In a democratic government it would seem that the lavish expenditures of the rich, however much they may be against the interest of those who indulge in them, yet, by their constant tendency to diffuse among the mass of citizens property, and the influence, and information and comfort connected with it, they can hardly be considered as likely to have an injurious influence upon the liberty of the community.

J. J. M.

General Intelligence.

[For the Northern Light.]

THE OSWEGO CANAL.

BY GEORGE H. MCWHORTEN.

The Canals of the state of New-York, which are designated as the Lateral Canals, are often referred to in public discussions, as unproductive of revenue and as a burden upon the treasury. They have thus been repeatedly presented to the public in executive messages and in reports from the state officers and legislative committees—distinguished members of the Legislature and the general press, in the discussion of financial questions assume the fact as established—and which indeed, no one seems to controvert—that the lateral canals are a drain upon the treasury. I do not believe in the truth of the allegation, in respect either to the Oswego or the Cayuga and Seneca canals. To demonstrate that it is not true in relation to the Oswego canal is the purpose of this paper.

In the last annual report of the Commissioners of the Canal Fund, under date of January 17th, 1842, the Oswego canal is charged with payments amounting to $1,243,506.40; and credited with receipts amounting to $959,587.18; and charged with "deficiencies, paid by the general fund and the Erie and Champlain canals," amounting to $283,919.22. How well the general fund and the Erie and Champlain canals could afford to pay these deficiencies, I now proceed to show.

According to the method of stating the canal accounts, the lateral canals are credited only with the tolls collected for account of those canals. Although very large sums are paid into the lateral canal offices for account of the Erie canal, no credit is given the lateral canals for any part of them. When the constitution was adopted in 1821, but a small part of the Erie canal was finished, and the Erie and Champlain canals are described therein, as "the navigable communications between the great western and northern lakes and the Atlantic ocean, which now are or hereafter shall be completed." The Oswego canal is evidently no more a lateral canal, than is the western section of the Erie canal. The law however has made it such, and as such it must be considered. From statements obtained from the office of the Collector at Oswego, I find the collections made there for account of the Erie canal, amount to the sum of

	$268,807.06
No tolls for account of the Erie canal were collected at the Oswego office before 1834. For nearly every year since that time, the tolls collected for the Erie have been considerably more than double the tolls collected for the Oswego. An estimate therefore of double the Oswego tolls for the years preceding '34, is probably much less than the amount which was collected at the Erie canal offices, and which ought to have been paid at the Oswego office. This estimate would be	55,824.26
Amount collected at the Salina office for the Erie canal, as per statement of Collector at Salina	323,479.23
Estimate of double the tolls collected for Oswego, at this office for the years 1828, 29, and '30—tolls in those years not being paid at this office for account of the Erie	36,442.56
	$684,553.11

This is the amount in gross—which is subject of course to the usual charges, and in the opinion of some to charges arising from extrinsic considerations. I mean to satisfy the most captious, and will allow a deduction of 56 per cent for account of such charges, viz: $383,349.74, which deducted from the above gross sum, leaves a result of $301,203.37, which exceeds the deficiencies charged $17,284.15. The Oswego canal has therefore fully paid for itself, and the last mentioned sum is a surplus for which it should have credit with the treasury.

Among the regulations adopted by the Canal Board, for the purpose of increasing the canal revenues, was one permitting the free transit of wood, intended for fuel in the manufacture of salt. The Board anticipated, (and I believe experience has fully justified its judgment) that more than an equivalent for the tolls would be gained in the increase of the manufacture, and the consequent increase of the salt duties. Now nearly all the wood consumed at the Onondaga salines, is transported thither on the Oswego canal. The Canal Commissioners some ten or twelve years since, reported to the legislature their opinion that the Oswego canal ought to be credited with the tolls charged on the transportation of wood used in the manufacture of salt, in proportion to the quantity conveyed on the canal and delivered at the salt works. They estimated the credit for that year (I think 1829,) at $3000. The quantity of salt manufactured in '29 was 1,291,280 bushels. In 1841, 3,340,769 bushels. The increase is nearly threefold, and has been a regular annual increase. Five thousand dollars per annum, is probably much short of the amount with which the canal should be credited for account of wood used in the manufacture of salt, exempt from toll. Making that sum the estimate, the credit which should be extended to the canal at the termination of 1841, is $70,000.

The sections of land at the mouth of the Oswego river, now the location of the village of Oswego, were parts of the military tract, and of Scriba's patent. The place seemed to be designated by nature as the point of arrival and departure in the state of New-York, for the trade with the lake country. It was therefore reserved in the military grants, and the grant to Scriba was subsequently surveyed and plotted for a village, and the first sale of lots took place in 1815. The canal route was then undetermined and the lots went off at high prices. In 1824 (the western inland route for the Erie canal being then adopted) the legislature was called upon to interpose for the relief of the purchasers of Oswego lots. An act was accordingly passed, recognizing the fact of a great depreciation in the value of the lots and providing for the relief of the purchasers. A large number of the lots sold were abandoned by the purchasers and reverted to the state. The act for the construction of the Oswego canal having passed and the work commenced, another sale was ordered in 1827. At this sale the lots went off at higher prices than at the former. Persons who had abandoned their former purchases were competitors at this sale. A remarkable instance occurred of a person who had abandoned his title to one of the principal lots in the village, buying it again at a sum considerably beyond what was due on his old contract. Is not this positive demonstration that the value of Oswego lots was entirely dependent upon the fact, whether Oswego was or was not to be on the route of the navigable communications between the great western and northern lakes and the Atlantic ocean? This proposition demonstrated, it follows as a corollary conclusive, inevitable—that the prices at which Oswego lots sold, *above* the prices they would have brought without the canal, was a clear gain to the state in consequence of the construction of the canal; and that

without the canal, the sums resulting from the enhanced prices, would never have reached the state treasury. In stating an account then, between the state and the Oswego canal, the latter is clearly entitled to be credited with the amount of these enhanced prices. The state sales of Oswego lots made since the passage of the act for the construction of the canal amount to more than $244,000. Estimating the lots without the canal, at $25,000; a sum, it is believed considerably higher than could have been obtained for them—there results the sum of $219,000 with which the canal has a just claim to be credited.

From the above data may be stated the following account:

The Oswego Canal in acc't with the State.

Dr. To deficiences charged canal as per statement H, appended to the annual report of the Commissioners of the Canal Fund, dated January 17th, 1842,	$283,919.22
To balance to Crs.,	306,284.15
	$590,203.37
Cr. By tolls collected for account of Erie canal, after deducting charges as per explanation above,	$301,203.37
By tolls not collected on wood, used in the manufacture of salt, as per explanation above,	70,000.00
By part of the proceeds of sales of Oswego lots as per explanation above,	219,000.00
	$590,203.37

No interest is included in the above credits, although interest very largely contributes to make up the deficiencies charged in statement H. It thus appears that the Oswego canal has not only paid for itself, but has also paid a surplus into the treasury, for account of the General Fund, and of the Common School Fund, amounting to $306,284.15. This is more than 50 per cent above the cost of its construction. Is it not then in proportion to the capital invested the most productive work in which the state has engaged? *Oswego, July*, 1842.

BRITISH STATISTICS.

The following tables are appended to a speech delivered in Congress, by Mr. BREWSTER, of this state.

One of the annexed tables shows the difference between the colonial and foreign duty; and the other the colonial trade for a long series of years.

Scale of duties on grain and flour, when entered for consumption, by the act passed 29th April, 1842.

Wheat, per imperial quarter.				Flour per barrel.			
Average price.		Duty on foreign.	Duty on colon'l.	Duty on foreign.		Duty on colon'l.	
s.	s.	s. d.	s. d.	s.	d	s.	d.
under	51	22 0	5 0	12	0 3-8	3	0
51 and under	52	19 0	5 0	11	5 1-8	3	0
52 do	55	18 0	5 0	10	10	3	0
55 do	56	17 0	4 0	10	2 3-4	2	4 7-8
56 do	57	16 0	3 0	9	7 1-2	1	9 5-8
57 do	58	15 0	2 0	9	0 1-4	1	2 1-2
58 do	59	14 0	1 0	8	5	0	7 7-32
59 do	60	13 0	1 0	7	9 7-8	0	7 7-32
60 do	61	12 0	1 0	7	2 5-8	0	7 7-32
61 do	62	11 0	1 0	6	7 3-8	0	7 7-32
62 do	63	10 0	1 0	6	0 1-8	0	7 7-32
63 do	64	9 0	1 0	5	5	0	7 7-32
64 do	65	8 0	1 0	4	9 3-4	0	7 7-32
65 do	66	7 0	1 0	4	2 1 2	0	7 7-32
66 do	69	6 0	1 0	3	7 1-3	0	7 7-32
69 do	70	5 0	1 0	3	0	0	7 7-32
70 do	71	4 0	1 0	2	4 7-8	0	7 7-32
71 do	72	3 0	1 0	1	9 5-8	0	7 7-32
72 do	73	2 0	1 0	1	2 1-2	0	7 7-32
73 and upwards		1 0	1 0	0	7 7-32	0	7 7-32

Barley, Ind'n corn, and buckwheat, per imperial qua'tr.			Rye, beans, and peas, per imperial quarter.		
Average price.		Duty on foreign.	Average price.		Duty on foreign.
s.	s.	s. d.	s.	d.	s. d.
under	26	11 0	under	30	11 6
26 and under	27	10 0	30 and under	33	10 6
27 do.	30	9 0	33 do.	34	9 6
30 do.	31	8 0	34 do.	35	8 6
31 do.	32	7 0	35 do.	36	7 6
32 do.	33	6 0	36 do.	37	6 6
33 do.	34	5 0	37 do.	38	5 6
34 do.	35	4 0	38 do.	39	4 6
35 do.	36	3 0	39 do.	40	3 6
36 do.	37	2 0	40 do.	41	2 6
37 and upwards		1 0	41 do.	42	1 6
			42 and upwards		1 0
On colonial.		On col'ol.	On colonial.		On col'l
under	28	2 6	under	30	3 0
28 and under	29	2 0	30 and under	31	2 6
29 do.	30	1 6	31 do.	32	2 0
30 do.	31	1 0	32 do.	33	1 6
31 and upwards		0 6	33 do.	34	1 0
			34 and upwards		0 6

Oats, per imperial quarter.

Average price.		Duty on foreign.	
s.	s.	s.	d.
under	19	8	0
19 and under	20	7	0
20 do.	23	6	0
23 do.	24	5	0
24 do.	25	4	0
25 do.	26	3	0
26 do.	27	2	0
27 and upwards.		1	0
On colonial.		On colonial.	
under	22	2	0
22 and under	23	1	6
23 and upwards		0	6

IMPORTS AND EXPORTS.

	British West Indies.		British North American colonies.	
Year.	Imp'ts from	Exports to	Imp. from	Exports to
1795	$6,426,091	$2,634,664	$303,831	$259,810
1796	6,301,534	5,446,559	287,166	422,496
1797	3,045,045	2,147,025	341,012	404,896
1798	2,925,739	4,255,616	287,310	623,572
1799	6,083,372	6,285,254	225,627	612,198
1800	5,774,411	6,404,785	377,211	694,446
1801	6,968,032	9,699,722	543,387	941,027
1802	4,486,890	6,689,490	437,948	684,874
1803	4,492,861	5,715,620	401,786	1,005,846
1804	4,739,186	7,047,658	791,720	1,127,225
1805	.....	5,991,407	.....	1,144,001
1806	.....	5,807,928	.....	1,423,289
1807	.....	5,952,637	.....	1,563,024
1808	.....	1,861,063	.....	379,453
1809	.....	1,665,999	.....	761,431
1810	.....	2,394,163	.....	1,432,836
1811	.....	4,749,799	.....	1,847,644
1812	.....	1,797,240	.....	660,832
1813	.....	war.	.....	2,422
1814	.....	do	.....	10,050
1815	.....	1,702,973	.....	1,397,680
1816	.....	3,162,944	.....	3,387,680
1817	.....	3,871,367	.....	3,722,940
1818*				
1819*				
1820*				
1821	927,346	264,632	490,704	2,009,386
1822	335,637	452,141	526,817	1,897,550
1823	1,844,931	1,627,967	463,374	1,821,460
1824	2,758,067	1,771,006	705,931	1,775,724
1825	2,437,122	1,647,046	610,788	2,539,964
1826	2,204,412	2,110,802	650,315	2,588,549
1827	123,291	690,575	447,669	2,830,674
1828	895,207	28,855	445,118	1,674,674
1829	240,244	6,521	577,542	2,764,909
1830	168,579	1,910	650,303	3,786,373
1831	1,308,301	1,441,253	864,909	4,061,838
1832	1,422,237	1,686,206	1,229,526	3,614,385
1833	1,358,239	1,754,305	1,793,397	4,390,081
1834	1,163,509	1,596,539	1,548,733	3,535,676
1835	1,152,347	1,838,327	1,435,168	4,047,888
1836	1,288,257	1,846,486	2,427,571	2,650,266
1837	1,451,302	2,118,664	2,359,263	3,288,986
1838	1,635,848	2,200,852	1,555,670	2,723,491
1839	941,669	2,563,475	2,155,146	3,563,454
1840	1,048,165	2,966,584	2,007,767	6,100,001

* The returns for these years, and of the imports for several previous years, are not within our reach. The trade, however, must have been small, owing to the prohibitory act, passed in April, 1818, by the American Congress.

TONNAGE.

	From Brit. West Indies.		To Brit. West Indies.	
Year.	American.	Foreign.	American.	Foreign.
1816	26,321	75,704		
1821	32,631	None.	22,083	None.
1822	33,719	925	28,720	101
1823	71,346	9,520	68,350	8,745
1824	93,933	6,597	91,637	7,567
1825	101,604	6,907	93,967	6,807
1826	97,231	7,927	99,739	8,120
1827	43,167	9,088	26,796	7,753
1828	25,149	313	7,974	None.
1829	32,777	317	5,418	None.
1830	22,428	275	2,395	None.
1831	38,046	23,760	40,922	17,903
1832	61,408	27,328	66,769	19,367
1833	53,537	26,638	74,659	21,775
1834	37,081	18,278	51,329	18,288
1835	43,601	24,399	59,544	16,134
1836	48,581	24,823	56,295	16,276
1837	52,184	26,315	63,687	16,088
1838	30,522	23,389	56,769	11,245
1839	43,145	23,614	76,749	11,268
1840	54,899	29,294	78,234	13,364
Total	1,043,827	365,410	1,066,019	199,690

	From Br. Am. colonies.		To Br. Am. colonies.	
Year.	American.	Foreign.	American	Foreign.
1816	75,807	18,378		
1821	110,821	405	112,222	3,169
1822	92,025	4,056	90,977	11,846
1823	42,178	4,848	52,776	12,023
1824	48,728	3,989	53,951	9,130
1825	60,295	6,179	61,520	10,139
1826	74,396	8,420	76,191	10,108
1827	69,452	7,798	60,378	11,145
1828	69,296	2,186	63,801	10,658
1829	88,492	4,409	93,645	10,569
1830	130,827	4,002	117,171	14,267
1831	92,672	82,567	79,364	94,776
1832	74,601	106,671	65,066	146,292
1833	209,968	208,064	219,403	245,779
1834	173,278	289,984	195,939	323,120
1835	363,852	387,360	363,532	415,405
1836	278,850	377,823	291,930	428,191
1837	296,660	388,996	282,234	440,002
1838	266,220	370,397	261,286	393,156
1839	384,121	332,097	385,606	373,772
1840	300,939	387,949	295,901	401,605
Total.	3,282,565	2,998,246	3,222,634	3,386,352

The following letter to Professor Tellkampf, of Union College, was written by Dr. JULIUS, a distinguished Prussian, who was for some time connected with the Prussian Schools, and who visited this country some years ago, with a view to procure information in relation to our State Prison system, and other subjects of internal economy. We have thought the information it contains would be interesting to our readers.

TRANSLATION.

To Prof. J. L. TELLKAMPF, in Schenectady.

With great interest and instruction my dear Sir, I have read the first part of your valuable writings on the Penitentiaries of North America, which his Excellency Minister Eichorn, has had the kindness to communicate to me. Particularly interesting to me, was the information concerning the different ways of communication among the convicts in the penetentiaries of the Philadelphia system, which you have discovered during your frequent and protracted visits to those institutions, and which I acknowledge, had escaped me, because I, as a traveller, could not have an opportunity for minute examination. We owe to you our sincere thanks for your information, and would willingly render our assistance in making generally known yourself, and your merits on this subject.

Since you have rendered so important a service in transplanting this system to Europe, the following communication will certainly be agreeable to you. His Majesty the King who immediately after his accession to the throne called me hither, and has decreed a reform in our prison discipline, adopted about five weeks since, after ripe deliberation, the separation of the prisoners (the Philadelphia system) as the basis of the future Prussian prison discipline. We shall immediately begin with the erection of four large penitentiaries, in Berlin, in Koenigsberg, in Silesia, and in Westphalia. Also, all new prisons of detention of which several must be erected in a short time, are to be built on similar principles. I have already engaged by order of his Majesty, an architect from London, who is experienced in these matters, and we shall adopt in the new penetentiaries the improvements of the new British penitentiaries in so far as they surpass Philadelphia buildings of the same kind. The former I have visited, in accordance with my wish, the past year, accompanied by a Prussian architect.

How great those improvements are, you will probably have seen in the more recent documents of the British Parliament, which were written at a later period than the first part of your work; and the future seventh report of the British general inspectors will show you still more.

Under these circumstances I have again commenced the publication of a Journal on prison discipline, in connection with two highly distinguished gentlemen, the prospectus of which you will receive herewith. As soon as the first numbers of the journal shall be printed I shall send them to you, and request you to furnish me with an address in New-York to which I may direct the following numbers for you.

My assistant editors unite with me in requesting you to honor our journal with your valuable contributions which shall be well rewarded.

I should also like, with your permission, to insert some extracts from your first number in the new journal for which you shall also receive remuneration.

Hoping thus to have opened a literary and useful correspondence between us, I request you to let me know very soon in what manner I may become useful to you in Germany, and shall anxiously look forward for your orders. Your letters or packages for me, I wish you to send from New-York, under address Dr. Julius, Hamburg, since they will reach me more speedily, having made arrangements in Hamburg. Requesting you to remember me kindly in Schenectady, where I have also visited.

I remain with sincere esteem, respectfully yours,
Berlin, April 20, 1842. JULIUS.

CAST IRON BUILDING.—Buildings of cast iron (according to an English paper) are daily increasing at a prodigious rate in England, and it appears that houses are about to be constructed of this material. As the walls will be hollow, it will be easy to warm the buildings by a single stove placed in the kitchen. A three story house, containing ten or twelve rooms, will not cost more than five hundred dollars, regard being paid to the manner in which it may be ornamented. Houses of this description may be taken to pieces and transported from one place to another, at an expense of not more than one hundred and fifty dollars. It is said that a large number of cast iron houses are about to be manufactured in Belgium and England, for the citizens of Hamburg, whose habitations have been burnt.

AGAVE AMERICANA, *or* CENTURY PLANT.

[From the New-York State Mechanic.]

Appearance of the Plant at the Manor House in June.

This antient denizen of the Manor garden, was purchased just after the revolutionary war, at the sale of a confiscated estate in the city of New-York. It was then a well grown plant, and has been standing in the green house of its present owner nearly sixty years—the strong probability is, that this Agave is now between 80 and 100 years old.

A few weeks ago, for the first time, it gave signs of putting forth a flower stem. When the bud appeared, it grew with astonishing rapidity, (eighteen inches in twenty four hours) and has continued to rise until it is at this time nearly seventeen feet high. It has already produced some eight or ten branches, which are rapidly forming flower buds.

An event of such rare occurrence had awakened public attention to such a degree, that the managers of the Albany Orphan Asylum, being in great want of funds to sustain that interesting charity, applied to Gen. Van Rensselaer to have the plant placed at their disposal for exhibition. The correspondence on that subject has been published, and the General's answer granting the request, and reserving free admission to the tenants of the manor, is alike grateful to the managers and honorable to him.

A brief description of the Agave Americana, compiled from many books, the correctness of which is verified by a gentleman now in Albany, who has resided in South America, and is familiar with the different species, together with an engraving of the plant, may be interesting to the public.

Agave, from $\alpha\gamma\alpha\upsilon o\varsigma$ (admirable) in botany, a genus of the hexandia monogynia class and order; of the natural order of *coronariæ*, and the bromelia of Jussieu. According to the Linnean system by Gmelin there are seven species. It is not the Aloe, although it is commonly so denominated.

All the Agaves have their central leaves closely folded over each other, and embracing the flower stem in the *centre*, so that these never flower till all the leaves are expanded; and when the flower is past the plant dies: whereas the flower stem of the Aloe is produced on *one side* of the centre, annually from the same plant; and the leaves are more expanded.

The Agave is known in South America by its Indian names, *Tuna* and *Maguey*, and is there confounded with the Aloe. The Agave is an American, and the Aloe an Asiatic plant. The following is thought to be a correct description of the different varieties of this really admirable production of nature.

1. *Agave Americana*—whose stems when vigorous rise to a great height, (more than forty feet) and branch out on every side, so as to form a kind of pyramid, composed of greenish yellow flowers, which stand erect, and come out in thick clusters, making a beautiful appearance. If it be protected from the cold in autumn, a succession of new flowers will be produced for near three months, in favorable seasons. It has been supposed that it requires a hundred years to bring it to perfection. In hot countries it will flower in a few years. In this climate, under the most favorable circumstances, none have been known to flower in less than forty or fifty years.

Agave Americana in full Bloom.

The first that flowered in England is said to have been Mr. Cowell's, at Houton, in 1729.

The *Karatto* Agave is a variety brought from St. Christophers, and the name is given to other species of this genus, and has leaves from 2½ to 3 feet long and about three inches broad, ending in a black spine and more erect than those of the others—this sort has not flowered in England.

2. *Agave Vivipara* or Childing Agave, never grows to a large size, and as it produces no suckers from the root, it cannot be increased till it flowers. It was first cultivated by Mr. Miller, in 1731—Wm. Bartram, who was sent out on a botanical tour by Dr. Fothergill of London, saw this variety in flower, near the Musquito river, in Florida, in 1773—his words are: "I continued along the beach a quarter of a mile, and came up to a forest of the *Agave Vivipara*. I term it a forest, because the scapes or flower stems arose erect near thirty feet high, their tops branching in the form of a pyramidal tree, and those plants growing near each other occupied a space of ground of several acres. When their seeds are ripe they vegetate and grow on the branches until the stem dries, when the young plants fall to the ground, take root, and fix themselves in the sand."

3. *Agave Virginica*, resembles the first so much as not to be distinguishable from it, except by good judges. The leaves are narrower and of a paler color, the stems are not so high, nor do they branch in the same manner, but the flowers are collected into a close head at the top.

4. *Agave Lurida*, has two varieties—1. The Vera Cruz Agave, which resembles the first, with thinner leaves, indentures at the edges much closer, and not so deep, and blacker spines. 2. The rigid and narrow leaved Agave, with long, narrow, stiff leaves, entire, and terminated by a stiff black spine.

5. *Agave Tuberosa*, or tuberous rooted Agave, has leaves indented at the edges, and each indenture terminates in a spine, the root is thick and swells close above the surface of the ground, in other respects it agrees with the last species. It has two varieties, the single and the double thorned Agave.

6. *Agave Fetida*, has long, narrow, stiff leaves, of a pale green color, waved on their edges, those on the side spread open, and those in the centre are closely folded over each other, encompassing the bud. The juice of the leaves has a bad smell. It is seldom more than three feet high, but the flower stem rises near twenty and branches out in the manner of the first, but more horizontally, and the flowers are smaller and of a greener color. A plant of this species, which flowered in 1755 and then died, was cultivated in 1690 in the royal gardens at Hampton court. Of the leaves are formed ropes, and various kinds of cloth, which serve for garments and other purposes.

7. The *Agave Cubensis* has spinous leaves, and a hexapetalous corolla. M. La Mark makes this a variety of the *Agave Mexicana*, the Metl or Maguey of the Mexicans. It grows in Mexico and the island of Cuba. The mucilaginous juice is used as soap for washing, and the leaves are formed into a thread which serves for ropes, cloth, and other uses.

The Baron Humboldt in his work on New Spain thus describes the *Agave Fetida, or Maguey of Mexico.*

In the Spanish colonies there are several species of the *Maguey* which deserve a careful examination, and of which several, on account of the division of their corolla, the length of their stamina, and the form of these stigmata, appear to belong to a different genus. The Maguey or *Metl* cultivated in Mexico are numerous varieties of the *Agave Americana* which has become so common in our gardens, with yellow *fasciculated* and straight leaves, and stamina twice as long as the pinking of the corolla. We must not confound this with the *Agave Cubensis* of Jaquin, called by M. La Mark *Agave Mexicana*, and which has been believed by some botanists, for what reason I know not, the principal object of the Mexican cultivation.

In the province of Caraccas and Cumana the Agave Cubensis, is called *Maguey de Cocuy*. I have seen stocks (*hampes*) loaded with flowers from 38 to 40 feet in height. At Caraccas the Agave Americana is called *Maguey de Cocuiza*. The finest cultivations which I have seen, are in the valley of Toluca, and on the plains of Cholula. The plants only begin to yield the juice which goes by the name of honey, when the stem is on the point of development. Its proximity is announced by the direction of the radical leaves, which are observed by the Indians with much attention. These leaves which are then inclined towards the earth, rise all of a sudden, and they endeavour to form a junction to cover the stem which is on the point of formation.

The bundle of central leaves (*el Corazon*) becomes at the same time of a clearer green and lengthens perceptibly. They then begin to collect the juice, of which the *pulquè* (pronounced pulca) is made. They cut the bundle of central leaves, and enlarge insensibly the wound, and cover it with lateral leaves, which they raise up by drawing them close and tying them to the extremities. In this wound the vessels appear to deposite all the juice which would have formed the colossal hampe, or stem loaded with flowers.

This is a true vegetable spring, which keeps running for two or three mouths and from which the Indian draws three or four times a day. A vigorus plant will yield nearly two gallons each day for from four to five months, amounting to more than 250 gallons. And this from a plant scarcely 4 feet 9 inches, high, growing on the most arid grounds, and ferquently on banks of rocks hardly covered with vegetable earth. This plant with firm and vigorous leaves is neither affected by drought nor hail nor the excssive cold which prevails in the higher Cordilleras of Mexico. The stalk perishes after efflorescence. An infinity of shoots then spring up from the root of the decayed plant.

If a field is of old cultivation, we may calculate that a 12th or 14th of the plants will yield *honey* annully and that after a delay in the first instance from of fifteen to eighteen years.

The honey or juice of the Agave is of a very agreeable sour taste. It easily ferments, on account of the sugar and mucilage it contains. The operation is terminated in three or four days. The vinous beverage which resembles cider, has an odor of *putrid meat*, extremely disagreeable, but the Europeans who have been able to get over the aversion which this fœtid odor inspires, prefer pulquè to every other liquor.

A very intoxicating brandy is formed from the pulquè, which his called *Mexical or Aguardiente de Maguey*. I have been assured that the plant cultivated for distillation differs essentially from the common Maguey or *Maguey de pulquè*. It appears to be smaller, and to have the leaves not so glaucous (sea green) but not having seen it in flower, I cannot judge of the difference between the two species.

But the Maguey is not only the vine of the Mexicans, it can also supply the place of the hemp of Asia, and the papyrus (Cyperus papyrus) of the Egyptians. The paper on which the ancient Mexicans painted their hieroglyphical figures, was made of the fibers of Agave leeves, macerated in water, and disposed in layers like the fibers of the Egyptian Cyperus, and the mulberry of the South sea islands.

The thread which is obtained from the Maguey, is known in Europe by the name of pite thread, and it is preferred by naturalists to every other, because it is less subject to twist.

The juice which the agave yields when it is still far from the period of efflorescense is very acrid, and is successfully employed as a caustic in the cleansing of wounds. The prickles which terminate the leaves served formerly like those of the Cactus, for pins and nails to the Indians.

We may conclude from all that we have related, respecting the use of the different parts of the Maguey, that next to the maize and potato, this plant is the most useful of all the productions with which nature has supplied the mountaineers of Equinoxial America.—*Humboldt's New Spain. pp.* 369 *to* 376.

The ascent was toilsome, but the top was open, and so covered with that beautiful plant that we called it the *Mountain of Aloes*. Some were just peeping out of the ground, other were 20 or 30 feet high, and some gigantic stalks were dead; flowers which would have kindled rapture in the breast of beauty had bloomed and died in this desolate mountain, unseen except by the passing Indian.—*Stephen's Central Americavol.* 1, *p.* 90.

The pith of the stem after flowering, and it becomes dry, is used in South America for razor straps, and for which it is eminently calculated on account of its silicious quality.